



Class TC 801

Book 1u2

apo

Case do not destroy or throw away this publication. If you have no further use
for it write to the Geological Survey at Washington and ask for a frank to return it

DEPARTMENT OF THE INTERIOR

HUBERT WORK, Secretary

UNITED STATES GEOLOGICAL SURVEY

GEORGE OTIS SMITH, Director

WATER-SUPPLY PAPER 492

SUMMARY OF HYDROMETRIC DATA
IN WASHINGTON, 1878-1919

BY

GLENN L. PARKER AND LASLEY LEE

Prepared in cooperation with the

Washington State Board of Geological Survey

Governor Louis F. Hart, Chairman

Henry Landes, State Geologist



WASHINGTON

GOVERNMENT PRINTING OFFICE

1923

DEPARTMENT OF THE INTERIOR

HUBERT WORK, Secretary

UNITED STATES GEOLOGICAL SURVEY

GEORGE OTIS SMITH, Director

Water-Supply Paper 492

SUMMARY OF HYDROMETRIC DATA
IN WASHINGTON, 1878-1919

BY

GLENN L. PARKER AND LASLEY LEE

Prepared in cooperation with the

Washington State Board of Geological Survey

Governor Louis F. Hart, Chairman

Henry Landes, State Geologist



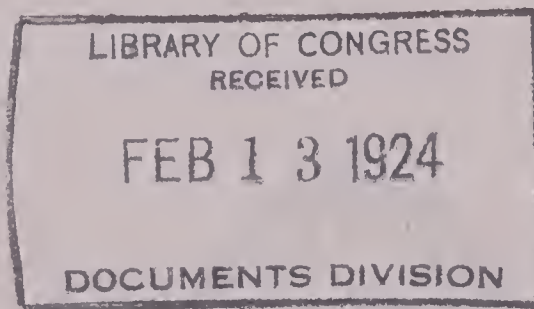
WASHINGTON

GOVERNMENT PRINTING OFFICE

1923

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
40 CENTS PER COPY

PURCHASER AGREES NOT TO RESELL OR DISTRIBUTE THIS
COPY FOR PROFIT.—PUB. RES. 57, APPROVED MAY 11, 1922



R.V.S. Mar. 12-24

TC 801
W2

CONTENTS.

	Page.
Introduction.....	1
Cooperation.....	1
Acknowledgments.....	2
Definition of terms.....	2
Convenient equivalents.....	3
Conversion tables.....	4
Explanation of data.....	6
Accuracy of data.....	7
Bibliography.....	8
Gaging-station records.....	25
Drainage basins between Columbia River and Puget Sound.....	25
Quinault River basin.....	25
Quinault River at Quinault Lake.....	25
Soleduck River basin.....	28
Soleduck River near Fairholm.....	28
Soleduck River near Quillayute.....	29
Calawah River near Forks.....	30
Lyre River basin.....	31
Lyre River at Piedmont.....	31
Elwha River basin.....	31
Elwha River at McDonald Bridge, near Port Angeles.....	31
Elwha River near Port Angeles.....	33
Dungeness River basin.....	34
Dungeness River near Sequim.....	34
Dungeness River at Dungeness.....	34
Puget Sound drainage basins.....	35
Dosewallips River basin.....	35
Dosewallips River at Brinnon.....	35
Duckabush River basin.....	35
Duckabush River near Duckabush.....	35
Skokomish River basin.....	36
North Fork of Skokomish River near Hoodsport.....	36
Nisqually River basin.....	38
Nisqually River near Ashford.....	38
Nisqually River near La Grande.....	38
East Creek near Elbe.....	40
Puyallup River basin.....	40
Puyallup River near Electron.....	40
Puyallup River at Alderton.....	43
Puyallup River at Puyallup.....	45
Carbon River at Fairfax.....	46
White River at Buckley.....	47
Greenwater River near Enumclaw.....	50
Green River at Kanaskat.....	51
Duwamish River basin.....	51
Cedar River at Cedar Lake, near North Bend.....	51
Cedar River at Cedar Falls.....	54
Cedar River near Ravensdale and Landsberg.....	56
Cedar River at Renton.....	61

Gaging-station records—Continued.

Puget Sound drainage basins—Continued.

	Page.
Snohomish River basin.....	62
South Fork of Skykomish River near Index.....	62
Skykomish River at Sultan.....	65
Foss River near Skykomish.....	66
Miller Creek near Miller River.....	66
North Fork of Skykomish River at Index.....	68
Sultan River near Sultan.....	71
Middle Fork of Snoqualmie River near North Bend.....	73
Snoqualmie River near Snoqualmie.....	77
North Fork of Snoqualmie River at cable bridge, near North Bend.....	81
North Fork of Snoqualmie River near North Bend.....	81
South Fork of Snoqualmie River near Garcia.....	85
South Fork of Snoqualmie River at North Bend.....	86
Tokul Creek near Snoqualmie.....	90
Pilchuck Creek near Granite Falls.....	91
Stilaguamish River basin.....	92
South Fork of Stilaguamish River near Silverton.....	92
South Fork of Stilaguamish River at Granite Falls.....	94
Deer Creek at Oso.....	95
Skagit River basin.....	95
Skagit River at Reflector Bar, near Marblemount.....	95
Skagit River near Marblemount.....	97
Skagit River near Sedro Woolley.....	99
Stetattle Creek near Marblemount.....	103
Cascade River near Marblemount.....	103
North Fork of Sauk River near Barlow Pass.....	104
Sauk River above Whitechuck River, near Darrington.....	105
Sauk River above Clear Creek, near Darrington.....	106
Sauk River at Darrington.....	106
Sauk River near Suiattle Crossing, near Sauk.....	108
South Fork of Sauk River near Barlow Pass.....	108
Clear Creek near Darrington.....	109
Baker River below Anderson Creek, near Concrete.....	110
Baker River at Concrete.....	112
Whatcom Creek basin.....	113
Whatcom Creek near Bellingham.....	113
Nooksack River basin.....	114
North Fork of Nooksack River near Glacier.....	114
Columbia River basin.....	114
Main stream.....	114
Columbia River at Trail, B. C.....	114
Columbia River at Wenatchee and Vernita.....	116
Columbia River at The Dalles, Oreg.....	119
Clark Fork basin.....	128
Clark Fork at Newport, Wash.....	128
Clark Fork at Metaline Falls.....	133
Sullivan Creek near Metaline Falls.....	135
Kettle River basin.....	137
Kettle River at Boyds.....	137
Curlew Creek near Curlew.....	138

Gaging-station records—Continued.

Columbia River basin—Continued.

	Page.
Hall Creek basin.....	138
Hall Creek at Inchelium.....	138
Stranger Creek basin.....	140
Stranger Creek at Meteor.....	140
Stranger Creek at Inchelium.....	141
Spokane River basin.....	142
Spokane River at Post Falls, Idaho.....	142
Spokane River at Trent.....	145
Spokane River at Spokane.....	145
Spokane River below Little Falls, near Long Lake.....	152
Latah Creek at Tekoa.....	154
North Fork of Latah Creek at Tekoa.....	155
Little Spokane River near Spokane.....	155
Sanpoil River basin.....	155
Sanpoil River at Keller.....	155
Nespelem River basin.....	157
Nespelem River at Nespelem.....	157
Okanogan River basin.....	160
Okanogan River at Okanogan.....	160
Similkameen River near Oroville.....	162
Sinlahekin Creek near Loomis.....	165
Johnson Creek near Riverside.....	165
Salmon Creek near Conconully.....	166
Methow River basin.....	171
Methow River near Winthrop.....	171
Methow River at Twisp.....	171
Methow River at Pateros.....	172
Chewack Creek at Winthrop.....	176
Chelan River basin.....	177
Stehekin River at Stehekin.....	177
Chelan River at Chelan.....	178
Railroad Creek at Lucerne.....	183
Entiat River basin.....	184
Entiat River at Entiat.....	184
Wenatchee River basin.....	187
Little Wenatchee River near Chiwaukum.....	187
Wenatchee River near Leavenworth.....	187
Wenatchee River at Cashmere and Dryden.....	190
Wenatchee River near Wenatchee.....	194
White River near Chiwaukum.....	194
Nason Creek at Nason.....	195
Chiwawa River near Leavenworth.....	196
Chiwaukum Creek near Chiwaukum.....	197
Icicle Creek near Leavenworth.....	197
Peshastin Creek at Blewett.....	198
Peshastin Creek below Ingalls Creek, near Leavenworth.....	199
Crab Creek basin.....	199
Crab Creek at Adrian.....	199
Crab Creek near Warden.....	200
Rocky Ford Creek near Ephrata.....	200
Yakima River basin.....	201
Yakima River near Martin.....	201
Yakima River at Easton.....	206

Gaging-station records—Continued.

Columbia River basin—Continued.

Yakima River basin—Continued.

	Page.
Yakima River at Cle Elum.....	208
Yakima River at Umtanum.....	212
Yakima River at Selah Gap, near North Yakima.....	215
Yakima River at Union Gap, near Yakima.....	215
Yakima River near Parker.....	222
Yakima River near Mabton.....	225
Yakima River near Prosser.....	225
Yakima River at Kiona.....	227
Yakima River near Richland.....	231
Cabin Creek near Easton.....	232
Kachess River near Easton.....	232
Cle Elum River near Roslyn.....	237
Teanaway River near Cle Elum.....	241
Swauk Creek near Cle Elum.....	242
Taneum Creek near Thorp.....	243
Manastash Creek near Ellensburg.....	244
Wenas Creek near Selah.....	245
Naches River at Anderson ranch, near Nile.....	246
Naches River at Oak Flat, near Nile.....	247
Naches River below Tieton River, near Naches.....	251
Naches River near North Yakima.....	254
Bumping River near Nile.....	257
American River near Nile, Wash.....	261
North Fork of Tieton River below Clear Creek, near Naches.....	261
Tieton River at McAllister Meadows, near Naches.....	262
Tieton River at headworks of Tieton canal, near Naches.....	263
Tieton River above and below Oak Creek, near Naches.....	267
North Fork of Ahtanum Creek near Tampico.....	270
Ahtanum Creek at The Narrows, near Tampico.....	273
Ahtanum Creek near Yakima.....	274
South Fork of Ahtanum Creek near Tampico.....	275
New Reservation canal at Parker.....	278
Old Reservation canal at Parker.....	280
Sunnyside canal near Parker.....	282
Toppenish Creek near Fort Simcoe.....	285
Toppenish Creek near White Swan.....	287
Toppenish Creek at Alfalfa.....	288
Simcoe Creek near Fort Simcoe.....	289
Reservation drain at Alfalfa.....	292
Satus Creek near Toppenish.....	294
Snake River basin.....	297
Snake River at Riparia.....	297
Snake River near Burbank.....	298
Grande Ronde River at Zindel.....	300
Asotin Creek near Asotin.....	303
Tucannon River near Pomeroy.....	304
Tucannon River near Starbuck.....	304
Palouse River near Potlatch, Idaho.....	305
Palouse River at Elberton.....	307
Palouse River near Winona.....	307
Palouse River at Hooper.....	308
Rock Creek near Ewan.....	312

Gaging-station records—Continued.

Columbia River basin—Continued.

	Page.
Walla Walla River basin.....	314
Mill Creek near Walla Walla.....	314
Rock Creek basin.....	315
Rock Creek near Goldendale.....	315
Squaw Creek near Goldendale.....	316
Klickitat River basin.....	316
Klickitat River above Pearl Creek, near Glenwood.....	316
Klickitat River near Glenwood.....	317
Klickitat River below Glenwood.....	319
Klickitat River at Klickitat.....	320
Klickitat River near Lyle.....	320
Pearl Creek near Glenwood.....	321
Swamp Creek near Glenwood.....	322
West Fork of Klickitat River near Glenwood.....	322
Cunningham Creek near Glenwood.....	323
Big Muddy Creek near Glenwood.....	323
Cougar Creek near Glenwood.....	323
Dairy Creek near Glenwood.....	324
Little Klickitat River near Goldendale.....	324
White Salmon River basin.....	325
White Salmon River near Guler.....	325
White Salmon River at splash dam, near Trout Lake.....	325
White Salmon River at Husum.....	327
White Salmon River near Underwood.....	329
Trout Creek at Guler.....	331
Lewis River basin.....	332
Lewis River above Muddy River, near Cougar.....	332
Lewis River at Peterson ranch, near Cougar.....	332
Lewis River near Amboy.....	332
Lewis River at Ariel.....	335
Muddy River near Cougar.....	335
Pine Creek near Cougar.....	335
Swift Creek near Cougar.....	335
Kalama River basin.....	336
Kalama River near Kalama.....	336
Cowlitz River basin.....	337
Ohanapecosh River near Lewis.....	337
Cowlitz River at Lewis.....	339
Cowlitz River at Randle.....	341
Cowlitz River at Mossy Rock.....	342
Cowlitz River at Mayfield.....	343
Clear Fork near Lewis.....	344
Coal Creek near Lewis.....	346
Lake Creek at outlet of Packwood Lake, near Lewis.....	347
Lake Creek at mouth, near Lewis.....	349
Hagar Creek near Lewis.....	351
North Fork of Hagar Creek near Lewis.....	352
Johnson Creek below West Fork, near Lewis.....	353
Johnson Creek near Lewis.....	353
Glacier Creek near Lewis.....	356
Cispus River near Randle.....	356
Toutle River near Castle Rock.....	356
Index.....	359

ILLUSTRATIONS.

	Page.
PLATE I. Recorder installations: <i>A</i> , Quinault River at Quinault Lake; <i>B</i> , Nisqually River near La Grande.....	8
II. <i>A</i> , Artificial control and gaging bridge, East Creek near Elbe; <i>B</i> , Measuring equipment and recorder installation, Puyallup River at Puyallup.....	8
III. Recorder installations: <i>A</i> , Sultan River near Sultan; <i>B</i> , Middle Fork of Snoqualmie River near North Bend.....	8
IV. Recorder installations: <i>A</i> , South Fork of Snoqualmie River at North Bend; <i>B</i> , Deer Creek at Oso.....	8
V. Types of recorder installations for isolated localities: <i>A</i> , North Fork of Sauk River near Barlow Pass; <i>B</i> , Baker River below Anderson Creek, near Concrete.....	8
VI. <i>A</i> , Measuring equipment, gaging car provided with reel, Clark Fork at Metaline Falls; <i>B</i> , Inclined and vertical staff gages beside recorder installation, Spokane River at Post Falls, Idaho.....	8
VII. Recorder installations: <i>A</i> , Little Spokane River near Spokane; <i>B</i> , Tieton River at headworks of Tieton canal, near Naches.....	8
VIII. <i>A</i> , United States Reclamation Service gaging station on Naches River at Oak Flat, near Nile; <i>B</i> , Artificial concrete control and gaging bridge on North Fork of Ahtanum Creek near Tampico.....	8
IX. Map of the State of Washington showing location of gaging stations.....	In pocket.

SUMMARY OF HYDROMETRIC DATA IN WASHINGTON, 1878-1919.

By GLENN L. PARKER and LASLEY LEE.

INTRODUCTION.

The United States Geological Survey began to collect records of stream flow in the State of Washington in August, 1893, when gaging stations were established on Yakima and Naches rivers. The work has been continued and enlarged gradually until by September 30, 1919, a total of 1,120 years of record had been made available at 209 gaging stations. Analyses of early records, preserved by interested persons, have made it possible to determine the daily discharge of lower Columbia River since March, 1878, and of Spokane River since April, 1891.

The purpose of this report is to present, for ready reference, a summary of the hydrometric data obtained in the State, the details of which are contained in 45 different volumes published by the United States Geological Survey. The monthly and yearly discharge given herein will serve most of the needs for stream-flow data, and the bibliography (pp. 8-25) will facilitate reference to more detailed information.

As gaging-station records are published annually, it frequently occurs that field work or office analysis completed after a publication has been issued warrants revision of original computations. These revisions, which of necessity appear in later publications, are often overlooked, and the less accurate original computations are used instead. The records given herein include all revised computations and may be considered the latest and best information available at this time. It should be pointed out, however, that subsequently additional data and more comprehensive analyses may throw new light on these revised computations.

COOPERATION.

Since 1909 successive Washington State legislatures have appropriated funds for the use of the State Board of Geological Survey in cooperating with the United States Geological Survey in topographic

mapping and investigations of water resources. Cooperative agreements have been drawn providing that, after plans acceptable to each organization have been formulated, the work shall be directed by the United States Geological Survey and paid for by equal allotments of State and Federal funds.

This report has been prepared at the request of Henry Landes, State geologist, with the approval of the State Board of Geological Survey, which consists of Gov. Louis F. Hart, chairman; State Treasurer W. W. Sherman, secretary; Dr. Henry Suzzallo, president of the University of Washington; and Dr. Ernest O. Holland, president of the State College.

ACKNOWLEDGMENTS.

This summary has been prepared by the water-resources branch of the United States Geological Survey in connection with its principal function of determining the daily discharge of important streams.

Special acknowledgment is due to Mr. Henry Landes, State geologist, for helpful suggestions and for the efficient manner in which he represented the Washington State Board of Geological Survey in cooperative relations.

The writers are indebted to Mr. J. T. Hartson, Mr. L. D. Carson, and Miss Claudia L. Underwood for assistance in assembling and checking the records here given.

DEFINITION OF TERMS.

The volume of water flowing in a stream—the “discharge” or “run-off”—is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups—(1) those that represent a rate of flow, as second-feet, gallons per minute, and discharge in second-feet per square mile, and (2) those that represent the actual quantity of water, as run-off in inches, acre-feet, and millions of cubic feet. The principal terms used in this report are second-feet, second-feet per square mile, run-off in inches, and acre-feet. They may be defined as follows:

“Second-feet” is an abbreviation for “cubic feet per second.” A second-foot is the rate of discharge of water flowing in a channel 1 foot wide and 1 foot deep at an average velocity of 1 foot per second. It is generally used as a fundamental unit from which others are computed by the use of the factors given in the tables on pages 3-6.

“Second-feet per square mile” is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly as regards both time and area.

“Run-off in inches” is the depth to which an area would be covered if all the water flowing from it in the period stated were uni-

formly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in inches.

An "acre-foot" is the quantity required to cover an acre to the depth of 1 foot.

CONVENIENT EQUIVALENTS.

1 United States gallon of water weighs 8.34 pounds avoirdupois.

1 cubic foot of water weighs 62.5 pounds avoirdupois.

1 second-foot=7.48 United States gallons per second=448.8 United States gallons per minute=26,929.9 United States gallons per hour=646,317 United States gallons per day.

1 second-foot=60 cubic feet per minute=3,600 cubic feet per hour=86,400 cubic feet per day=31,536,000 cubic feet per year=0.000214 cubic miles per year.

1 second-foot=0.9917 acre-inch per hour=1.983471 acre-feet per day=723.966942 acre-feet per year (=725.950413 acre-feet per year of 366 days).

1 second-foot=0.028317 cubic meter per second=1.699 cubic meters per minute=101.941 cubic meters per hour=2,446.58 cubic meters per day.

1 second-foot for 1 year (365 days) will cover 1 square mile 1.1312 feet or 13.5744 inches deep.

1 inch deep on 1 square mile=2,323,200 cubic feet=0.0737 second-foot for 1 year.

1,000,000,000 (1 United States billion) cubic feet=11,570 second-feet for one day=413 second-feet for one 28-day month=399 second-feet for one 29-day month=386 second-feet for one 30-day month=373 second-feet for one 31-day month.

100 United States gallons per minute=0.223 second-foot=0.442 acre-foot in one day.

1 foot deep (head of 1 foot)=0.434 pound pressure on 1 square inch.

1 cubic meter per minute=0.5886 second-foot=4.403 United States gallons per second=1.1674 acre-feet per day.

1 cubic meter, stere, or kiloliter=1,000,000 cubic centimeters=1,000 liters=61,023.4 cubic inches=264.17 United States gallons=35.3145 cubic feet=1.30794 cubic yards=0.000810708 acre-foot.

1 acre-foot=325,851 United States gallons=43,560 cubic feet=1,613½ cubic yards=1,233.49 cubic meters.

1 million gallons per day=1.55 second-feet=3.07 acre-feet per day=2.629 cubic meters per minute.

1 second-foot falling 8.81 feet=1 horsepower.

1 second-foot falling 10 feet=1.135 horsepower.

1 second-foot falling 11 feet=1 horsepower, 80 per cent efficiency.

1 horsepower=5,694,120 foot-gallons per day=550 foot-pounds per second=33,000 foot-pounds per minute=1,980,000 foot-pounds per hour=2,545 British thermal units per hour=76 kilogrammeters per second=1.27 kilogrammeters per minute=746 watts.

1 horsepower, boiler rating, requires the evaporation of 34½ pounds per hour of water at 212° F. to dry steam at the same temperature; or the expenditure of 33,317 British thermal units; and in practice is developed by burning 3½ to 4½ pounds per hour of coal under 10 to 12 square feet of heating surface.

1 British thermal unit=778 foot-pounds.

1 pound of bituminous coal contains about 14,100 British thermal units, or 11,000,000 foot-pounds of energy.

Best steam engine efficiency is about 18 per cent and requires 1 pound of coal per hour per horsepower. Average efficiency is about 10 per cent and requires 1.8 pounds of coal per hour per horsepower.

CONVERSION TABLES.

Conversion from one unit to another is a simple arithmetical process. The following tables afford a ready means of conversion between terms commonly used in hydraulic computations. Figures may be chosen from the tables for units, tens, hundreds, etc., and then combined to get the desired results. The base data will seldom justify use of more than three significant figures, although some tables give more.

*Conversion tables.***Discharge in second-feet per square mile into run-off in inches.**

[1 second-foot for 1 day = 86,400 cubic feet = $\frac{86,400 \times 12}{27,878,400} = 0.03719$ inch deep on 1 square mile.]

Discharge (second-feet per square mile).	Run-off (depth in inches).				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	0.03719	1.041	1.079	1.116	1.153
2.....	.07438	2.083	2.157	2.231	2.306
3.....	.11157	3.124	3.236	3.347	3.459
4.....	.14876	4.165	4.314	4.463	4.612
5.....	.18595	5.207	5.393	5.578	5.764
6.....	.22314	6.248	6.471	6.694	6.917
7.....	.26033	7.289	7.550	7.810	8.070
8.....	.29752	8.331	8.628	8.926	9.223
9.....	.33471	9.372	9.707	10.041	10.376

Discharge in second-feet into run-off in acre-feet.

[1 second-foot for 1 day = 86,400 cubic feet = $\frac{86,400}{43,560} = 1.983471$ acre-feet.]

Discharge (second- feet).	Run-off (acre-feet).				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	1.983	55.54	57.52	59.50	61.49
2.....	3.967	111.1	115.0	119.0	123.0
3.....	5.950	166.6	172.6	178.5	184.5
4.....	7.934	222.1	230.1	238.0	246.0
5.....	9.917	277.7	287.6	297.5	307.4
6.....	11.90	333.2	345.1	357.0	368.9
7.....	13.88	388.8	402.6	416.5	430.4
8.....	15.87	444.3	460.2	476.0	491.9
9.....	17.85	499.8	517.7	535.5	553.4

Discharge in second-feet into run-off in millions of cubic feet.

[1 second-foot for 1 day = 86,400 cubic feet = 0.0864 million cubic feet.]

Discharge (second- feet).	Run-off (millions of cubic feet).				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	0.0864	2.419	2.506	2.592	2.678
2.....	.1728	4.838	5.012	5.184	5.356
3.....	.2592	7.257	7.518	7.776	8.034
4.....	.3456	9.676	10.02	10.37	10.71
5.....	.4320	12.10	12.53	12.96	13.39
6.....	.5184	14.51	15.04	15.55	16.07
7.....	.6048	16.93	17.54	18.14	18.75
8.....	.6912	19.35	20.05	20.74	21.42
9.....	.7776	21.77	22.55	23.33	24.10

Conversion tables—Continued.

Discharge in second-feet into run-off in millions of gallons.

[1 second-foot for 1 day = 86,400 cubic feet = $\frac{86,400 \times 1,728}{231}$ = 646,317 gallons = 0.646317 million gallons.]

Discharge (second-foot).	Run-off (million of gallons).				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	0.6463	18.10	18.74	19.39	20.04
2.....	1.293	36.20	37.48	38.78	40.08
3.....	1.939	54.30	56.22	58.17	60.12
4.....	2.585	72.40	74.96	77.56	80.16
5.....	3.232	90.50	93.70	96.95	100.2
6.....	3.878	108.6	112.4	116.3	120.2
7.....	4.524	126.7	131.2	135.7	140.3
8.....	5.170	144.8	149.9	155.1	160.3
9.....	5.817	162.9	168.7	174.5	180.4

Discharge in second-feet into run-off in acre-feet for a year of 365 days.

1 second-foot = 86,400 cubic feet in 1 day = $\frac{86,400 \times 365}{43,560}$ = 723.966942 acre-feet in 1 year.]

Tens.	Units									
	0	1	2	3	4	5	6	7	8	9
0.....		724	1,448	2,172	2,896	3,620	4,344	5,068	5,792	6,516
1.....	7,240	7,964	8,688	9,412	10,136	10,860	11,583	12,307	13,031	13,755
2.....	14,479	15,203	15,927	16,651	17,375	18,099	18,823	19,547	20,271	20,995
3.....	21,719	22,443	23,167	23,891	24,615	25,339	26,063	26,787	27,511	28,235
4.....	28,959	29,683	30,407	31,131	31,855	32,579	33,302	34,026	34,750	35,474
5.....	36,198	36,922	37,646	38,370	39,094	39,818	40,542	41,266	41,990	42,714
6.....	43,438	44,162	44,886	45,610	46,334	47,058	47,782	48,506	49,230	49,954
7.....	50,678	51,402	52,126	52,850	53,574	54,298	55,021	55,745	56,469	57,193
8.....	57,917	58,641	59,365	60,089	60,813	61,537	62,261	62,985	63,709	64,433
9.....	65,157	65,881	66,605	67,329	68,053	68,777	69,501	70,225	70,949	71,673

Discharge in second-feet into theoretical horsepower per foot of fall.

1 second-foot = 0.1136 theoretical horsepower per foot of fall. Weight of 1 cubic foot of water = 62.5 pounds.

Tens.	Units.									
	0	1	2	3	4	5	6	7	8	9
0.....	0.00	0.114	0.227	0.341	0.454	0.568	0.682	0.795	0.909	1.02
1.....	1.14	1.25	1.36	1.48	1.59	1.70	1.82	1.93	2.04	2.16
2.....	2.27	2.39	2.50	2.61	2.73	2.84	2.95	3.07	3.18	3.29
3.....	3.41	3.52	3.64	3.75	3.86	3.98	4.09	4.20	4.32	4.43
4.....	4.54	4.66	4.77	4.88	5.00	5.11	5.23	5.34	5.45	5.57
5.....	5.68	5.79	5.91	6.02	6.13	6.25	6.36	6.48	6.59	6.70
6.....	6.82	6.93	7.04	7.16	7.27	7.38	7.50	7.61	7.72	7.84
7.....	7.95	8.07	8.18	8.29	8.41	8.52	8.63	8.75	8.86	8.97
8.....	9.09	9.20	9.32	9.43	9.54	9.66	9.77	9.88	10.0	10.1
9.....	10.2	10.3	10.5	10.6	10.7	10.8	10.9	11.0	11.1	11.2

Conversion tables—Continued.

Run-off in millions of gallons per day into discharge in second-feet.

[1 million gallons per 24 hours = $\frac{231,000,000}{1,728 \times 86,400}$ cubic feet per second, or 1.547 second-feet.]

Tens.	Units.									
	0	1	2	3	4	5	6	7	8	9
0.....		1.55	3.09	4.64	6.19	7.74	9.28	10.83	12.38	13.93
1.....	15.47	17.02	18.57	20.11	21.66	23.21	24.76	26.30	27.85	29.40
2.....	30.94	32.49	34.04	35.59	37.13	38.68	40.23	41.78	43.32	44.87
3.....	46.42	47.96	49.51	51.06	52.61	54.15	55.70	57.25	58.79	60.34
4.....	61.89	63.44	64.98	66.53	68.08	69.63	71.17	72.72	74.27	75.81
5.....	77.36	78.91	80.46	82.00	83.55	85.10	86.64	88.19	89.74	91.29
6.....	92.83	94.38	95.93	97.48	99.02	100.57	102.12	103.66	105.21	106.76
7.....	108.31	109.85	111.40	112.95	114.49	116.04	117.59	119.14	120.68	122.23
8.....	123.78	125.33	126.87	128.42	129.97	131.51	133.06	134.61	136.16	137.70
9.....	139.25	140.80	142.34	143.89	145.44	146.99	148.53	150.08	151.63	153.18

EXPLANATION OF DATA.

The data presented in this report are assembled for climatic years ending September 30. At the end of a calendar year much of the precipitation that fell during the three months preceding is stored in the form of snow or ice or in ponds, lakes, swamps, and underground passageways. A large percentage of this stored water does not reach the streams until the spring and summer of the next calendar year. At the end of September, however, only a small amount of ground water remains as a part of previous precipitation, so that run-off for the year ending September 30 is practically all derived from precipitation within that year.

The base data collected at gaging stations consist, primarily, of records of stage and measurements of discharge. Records of stage are obtained either from direct readings on staff or chain gages or from water-stage recorders. A total of 51 water-stage recorders were in operation in the State of Washington in 1919. Measurements of discharge are made with a current meter according to methods¹ perfected by the United States Geological Survey through many years of experience. About 650 measurements a year are required for determining the relation between stage and discharge at an average of about 90 gaging stations in Washington.

Rating tables for each gaging station, indicating the discharge at any stage, are obtained by analyzing graphically the results of discharge measurements. Daily discharge, from which the maximum, minimum, monthly mean, and yearly mean discharges are computed, is determined by applying mean gage heights for days or for shorter periods to the rating tables. If streams are subject to rapid diurnal fluctuation the mean daily discharge is obtained (since 1915) by the use of a discharge integrator, an instrument operating on the principle

¹ Hoyt, J. C., and Grover, N. C., River discharge, 4th ed., pp. 61-76, New York, John Wiley & Sons.

of a planimeter but controlled by mechanism introducing functions of the rating table in such manner that tracing a time-stage graph with a pointer yields reading representing discharge.

In the monthly-discharge tables the column heading "Maximum" gives the highest mean discharge for a single day during the month or year specified. As the crest discharge of a flood covers a period much less than a day the crest or extreme maximum discharge is always somewhat higher than the maximum given in the tables. Likewise the column headed "Minimum" represents the lowest mean discharge for a single day. For most of the gaging stations the extreme maximum and minimum discharges are given in notes following the table for the last year of record. The column headed "Mean" gives the average flow for each second during the month. This average flow forms the basis of computing results shown in the remaining columns, except in the column headed "Accuracy."

Annual summary tables follow the tables of monthly discharge that cover five or more climatic years.

ACCURACY OF DATA.

The accuracy of stream-flow data depends, primarily, upon the permanence of relation between stage and discharge and upon the accuracy of observations of stage, measurements of flow, and interpretation of records.

The probable accuracy of monthly mean discharge (not the maximum or minimum or the mean for individual days), as judged by the writers or by the engineers who analyzed the base data, is shown by letters in the column headed "Accuracy." The judgment was made after giving consideration to the permanence of relation between stage and discharge, the precision with which the discharge rating curve is defined, the refinement and reliability of gage readings, the frequency of gage readings, and the methods of applying daily gage heights to the rating table to obtain the daily discharge. The letter A indicates that the mean monthly flow is judged accurate within 5 per cent; B, within 10 per cent; C, within 15 per cent; and D, within 25 per cent. Unusual features relating to accuracy are described in footnotes.

The monthly means for any gaging station may represent the actual flow passing the gage with acceptable accuracy, but the discharge per square mile and run-off in inches may be subject to considerable error on account of artificial regulation and diversion of water above the gage for irrigation or for other use. The "discharge in second-feet per square mile" and "run-off in inches" are therefore not computed if such errors appear probable. They are omitted also for any gaging station at which the average annual

run-off is less than 10 inches. Corrections are made for storage, diversion, and depletion if sufficient information is available to compute the probable natural flow. The flow at some gaging stations is controlled sufficiently by regulation in reservoirs to produce rather marked changes in natural monthly flow but no material change in natural yearly flow, so that for these stations "discharge in second-feet per square mile" and "run-off in inches" are omitted for months but are computed for full years.

All figures representing "discharge in second-feet per square mile" and "run-off in inches" previously published by the United States Geological Survey should be used with caution because of possible inherent sources of error not known to the Survey.

BIBLIOGRAPHY.

The large number of volumes containing hydrometric data for gaging stations in the State and the accumulation of revised figures of discharge superseding records published in earlier publications have made it seem advisable to include a bibliography in which gaging stations are grouped alphabetically and references given for each year of record. If a need arises for more information than is given in this report, detailed results may be found readily by consulting the publications cited on the following pages.

Records were published for calendar years to 1910 inclusive and for climatic years ending September 30 thereafter. The numbers in the columns headed "Year" refer to calendar years and climatic years correspondingly. The records from October to December, 1910, were duplicated when the change was made.

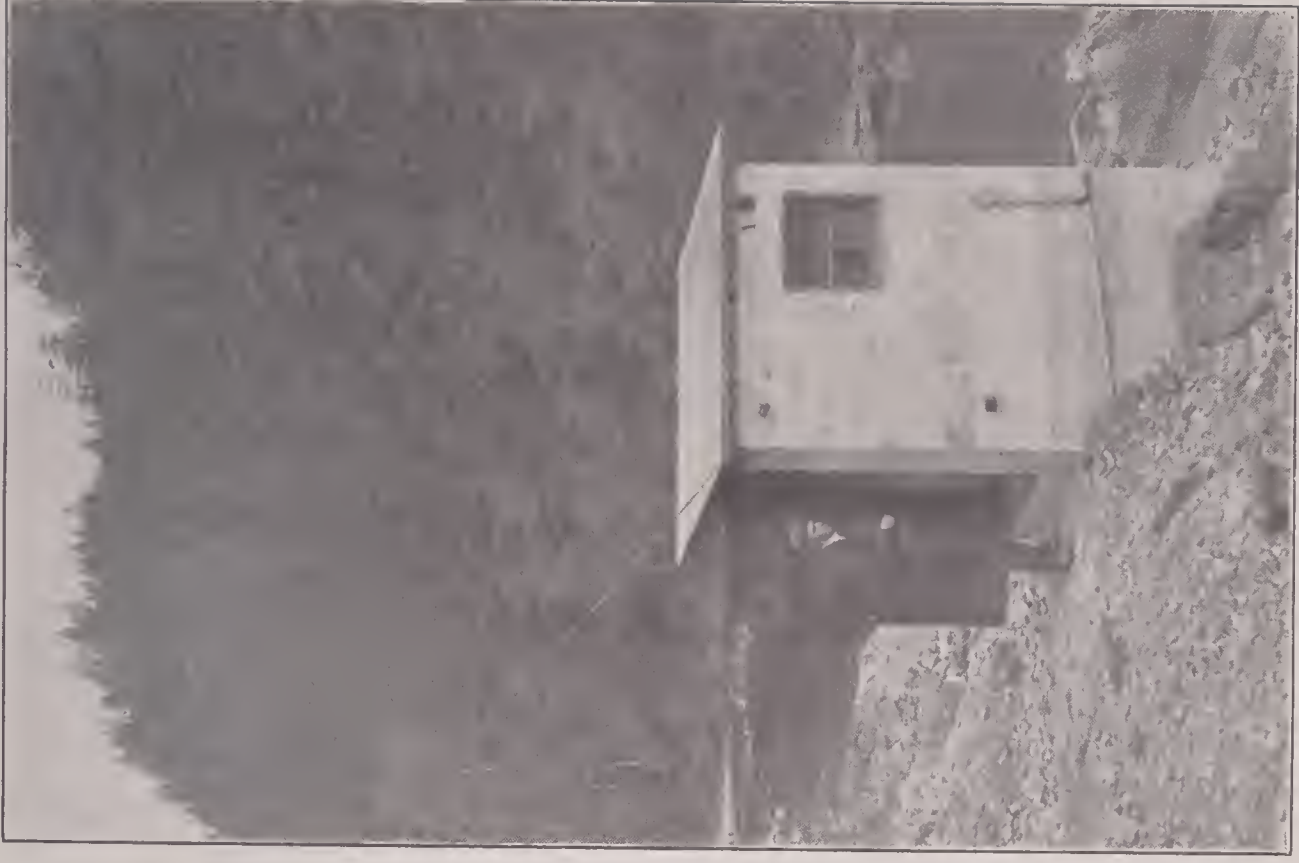
Bibliography of hydrometric data in the State of Washington.

[Publications of the United States Geological Survey are indicated by the following abbreviations: A, Annual Report; B, Bulletin; W, Water-Supply Paper. An asterisk (*) indicates that the results have been revised in later publications. A dagger (†) indicates that results do not include monthly discharge. An index number, referring to location as shown on the map (Pl. IX), is given in parentheses after the name of each gaging station.]

Gaging station.	Year.	Publication.
Ahtanum Creek at the Narrows, near Tampico (138)..	1908	W 252, p. 186.
	1909	W 272, p. 215.
	1910	W 292, p. 211.
	1911	W 312, p. 247.
	1912	W 332, p. 258.
	1913	W 362, p. 238.
Ahtanum Creek, North Fork, near Tampico (137)....	1907-8	W 252, p. 184.
	1909	W 272, p. 213.
	1910	W 292, p. 210.
	1911	W 312, p. 245.
	1912	†W 332, p. 275. Monthly discharge not previously published; see p. 271.
	1913	W 362, p. 236.
	1914	W 392, p. 179.
	1915	W 412, p. 236.
	1916	W 442, p. 183.
	1917	W 462, p. 162.
1918	W 482, p. 152.	
1919-20	W 512, p. 230.	



A. QUINAULT RIVER AT QUINAULT LAKE.



B. NISQUALLY RIVER NEAR LA GRANDE.

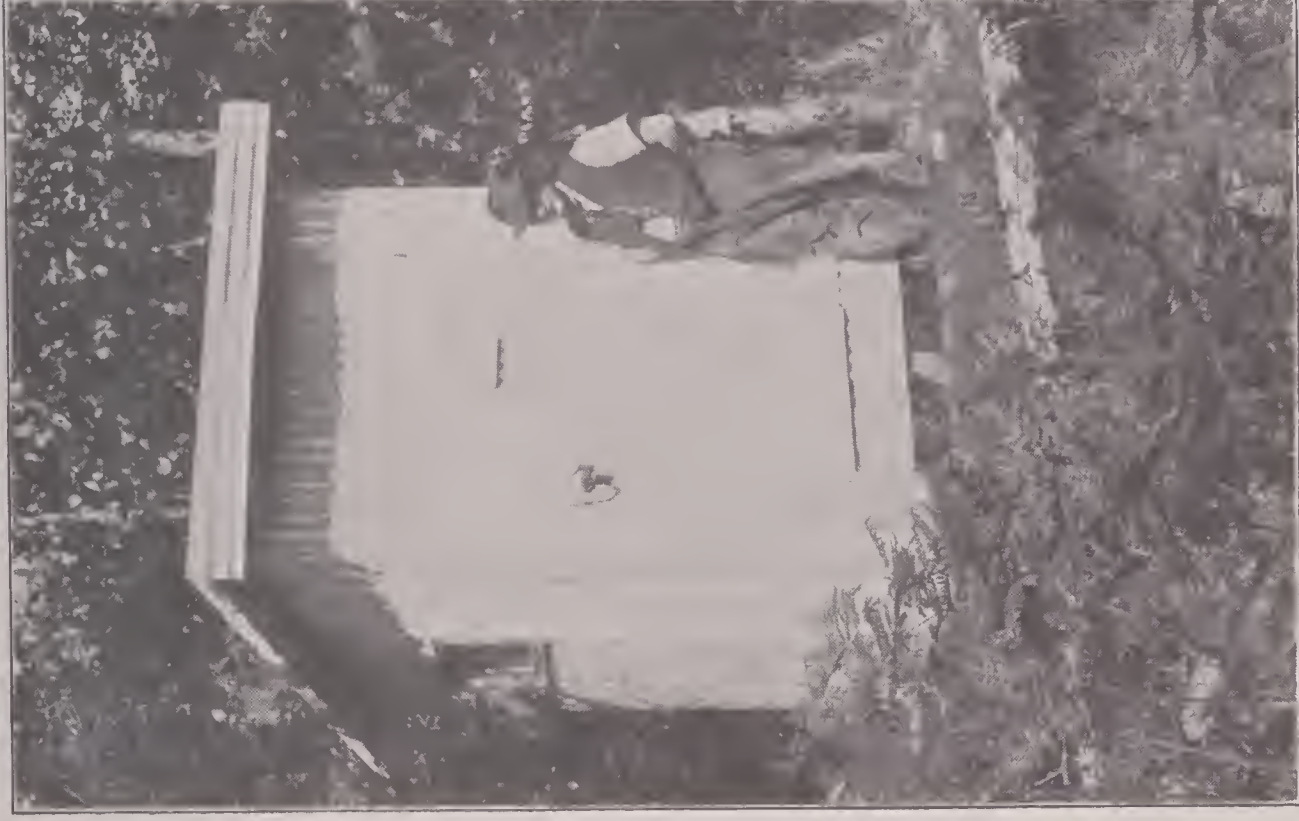
RECORDER INSTALLATIONS.



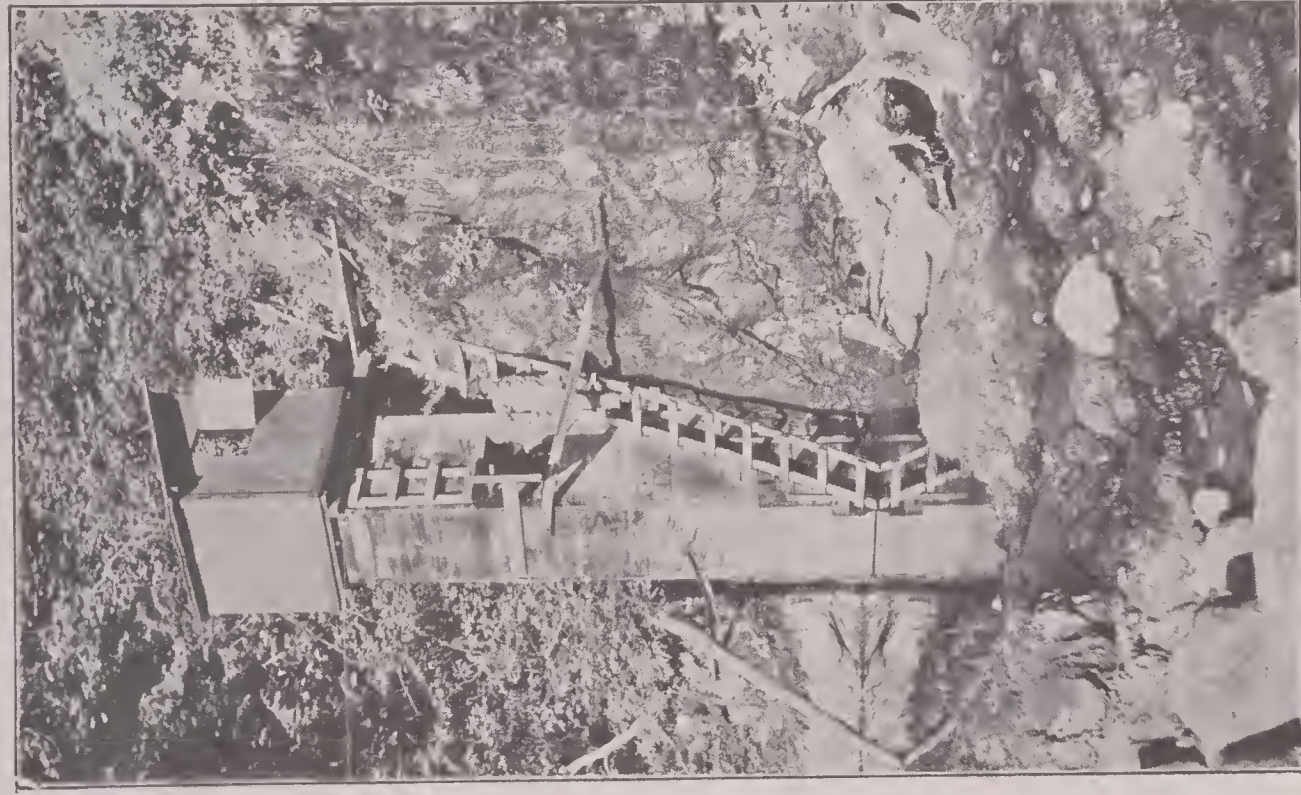
A ARTIFICIAL CONTROL AND GAGING BRIDGE, EAST CREEK NEAR ELBE.



B. MEASURING EQUIPMENT AND RECORDER INSTALLATION, PUYALLUP RIVER AT PUYALLUP.

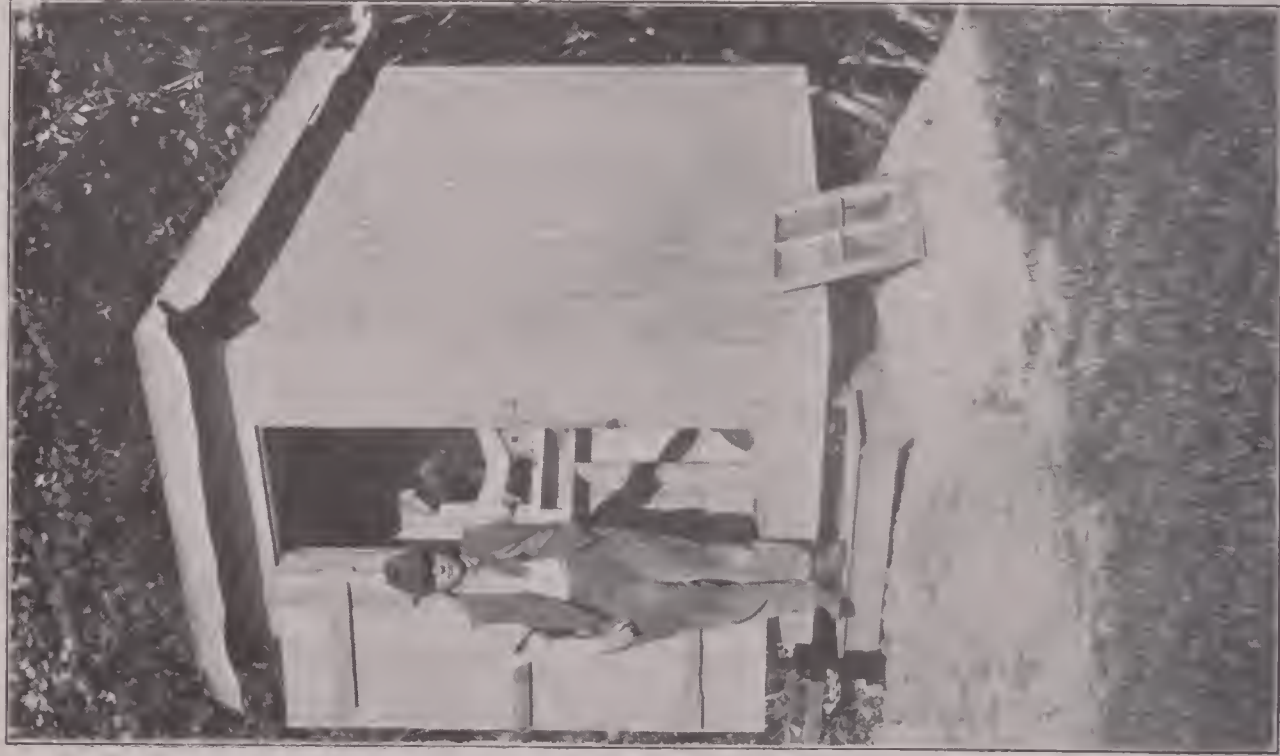


B. MIDDLE FORK OF SNOQUALMIE RIVER
NEAR NORTH BEND.



A. SULTAN RIVER NEAR SULTAN.

RECORDER INSTALLATIONS.

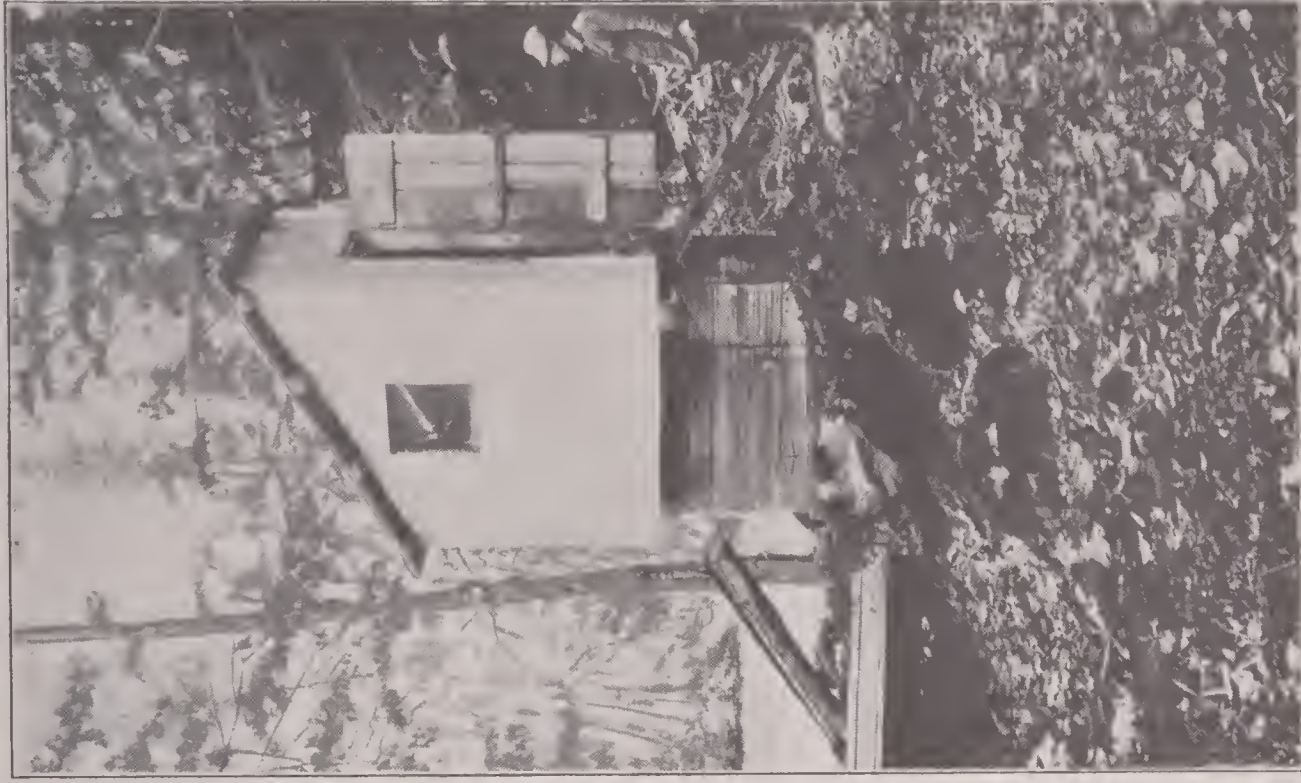


A. SOUTH FORK OF SNOQUALMIE RIVER AT
NORTH BEND.

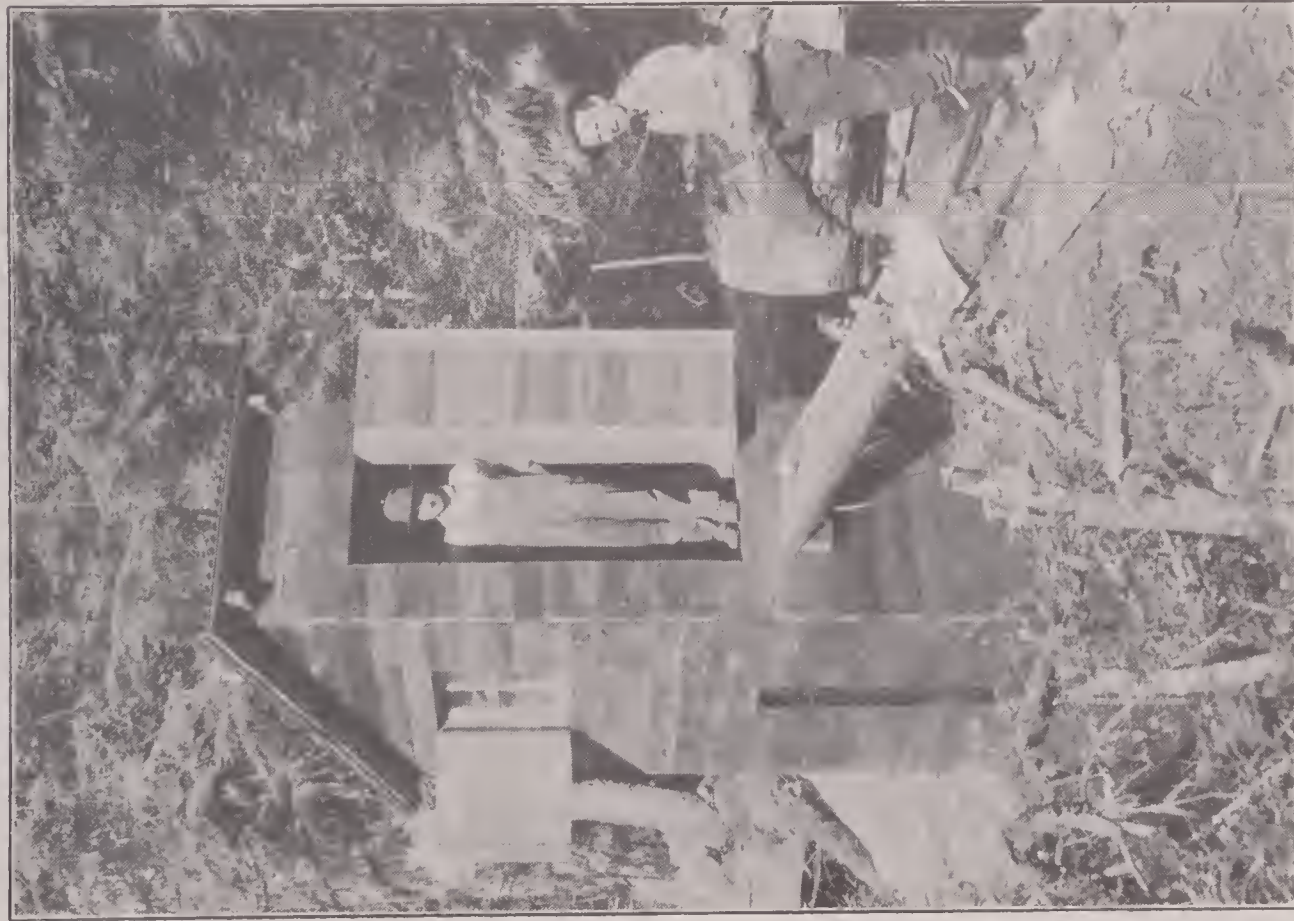
RECORDER INSTALLATIONS.



B. DEER CREEK AT OSO.



B. BAKER RIVER BELOW ANDERSON CREEK,
NEAR CONCRETE.



A. NORTH FORK OF SAUK RIVER NEAR BARLOW
PASS.

TYPES OF RECORDER INSTALLATIONS FOR ISOLATED LOCALITIES.



A. MEASURING EQUIPMENT, GAGING CAR PROVIDED WITH REEL, CLARK FORK AT METALINE FALLS.



B. INCLINED AND VERTICAL STAFF GAGES BE-SIDE RECORDER INSTALLATION, SPOKANE RIVER AT POST FALLS, IDAHO.



B. TIETON RIVER AT HEADWORKS OF TIETON CANAL, NEAR NACHES.



A. LITTLE SPOKANE RIVER NEAR SPOKANE.

RECORDER INSTALLATIONS.



A. UNITED STATES RECLAMATION SERVICE GAGING STATION ON NACHES RIVER
AT OAK FLAT, NEAR NILE.



B. ARTIFICIAL CONCRETE CONTROL AND GAGING BRIDGE ON NORTH FORK
OF AHTANUM CREEK NEAR TAMPICO.

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.
Ahtanum Creek, South Fork, near Tampico (140)....	1908	W 252, p. 189.
	1909	W 272, p. 217.
	1910	*W 292, p. 215; W 312, p. 250.
	1911	W 312, p. 250.
	1912	W 332, p. 262.
	1913	W 362, p. 240.
	1914	W 392, p. 180.
	1915	W 392, p. 180; W 412, p. 237.
	1916	W 442, p. 184.
	1917	W 462, p. 163.
	1918	W 482, p. 154.
Ahtanum Creek near Yakima (139).....	1919-20	W 512, p. 232.
	1904	W 135, p. 105.
	1907-8	W 252, p. 187.
	1909	W 272, p. 217.
American River near Nile (132).....	1910	W 292, p. 214.
	1911	W 312, p. 249; W 332, p. 260.
	1912	W 332, p. 260.
	1909	W 272, p. 203; W 369, p. 77.
	1910	W 292, p. 201; W 369, p. 77.
	1911	W 312, p. 237; W 369, p. 77.
Asotin Creek near Asotin (153).....	1913	W 362, p. 227.
	1914	W 392, p. 172.
	1915	W 412, p. 230.
	1904	†W 135, p. 239; W 214, p. 118.
	1905	†W 178, p. 168; W 214, p. 118.
Baker River below Anderson Creek, near Concrete (57).	1906	W 214, p. 118.
	1908	†W 252, p. 284.
	1910-11	W 312, p. 439.
	1910	†W 292, p. 633; W 312, p. 679.
	1911	W 312, p. 679.
	1912	W 332, p. 46.
	1913	W 362, p. 42.
	1914	W 392, p. 38.
	1915	W 412, p. 98.
	1916	W 442, p. 57.
	1917	W 462, p. 53.
Baker River at Concrete (58).....	1918	W 482, p. 55.
	1919-20	W 512, p. 99.
	1910	†W 292, p. 634; W 312, p. 681.
	1911	W 312, p. 681.
	1912	W 332, p. 48.
	1913	W 362, p. 44.
Big Muddy Creek near Glenwood (173).....	1914	W 392, p. 40.
	1915	W 412, p. 100.
	1905; 1908	†W 253, p. 41.
	1916-17.	W 444, p. 88.
	1917	W 464, p. 70.
Bumping River near Nile (131).....	1918	W 484, p. 61.
	1906	W 214, p. 60; W 369, p. 76.
	1909	W 272, p. 201; W 369, p. 76.
	1910	W 292, p. 199; W 369, p. 76.
	1911	*W 312, p. 235; W 369, p. 76.
	1912	W 332, p. 248; W 369, p. 76.
	1913	W 362, p. 224.
	1914	W 392, p. 170.
	1915	W 412, p. 228.
	1916	W 442, p. 178.
	1917	W 462, p. 157.
Cabin Creek near Easton (119).....	1918	W 482, p. 146.
	1919-20	W 512, p. 220.
	1909	W 272, p. 170; W 369, p. 85.
	1910	W 292, p. 169; W 369, p. 85.
	1911	W 312, p. 202; W 369, p. 85.
Calawah River near Forks (4).....	1912	†W 332, p. 275.
	1897-98	20th A, pt. 4, p. 522.
	1897	20th A, pt. 4, p. 522; †W 16, p. 184.
	1898	20th A, pt. 4, p. 522; †W 28, pp. 171, 175, 176.
	1899	21st A, pt. 4, p. 441; †W 38, p. 386; †W 39, p. 455.
	1900	22d A, pt. 4, p. 460; †W 51, p. 448; †W 52, p. 523.
	1901	†W 66, pp. 140, 177; W 75, p. 208.
	1910	†W 292, p. 608; W 313, p. 70.
Carbon River at Fairfax (19).....	1911	W 312, p. 646; W 313, p. 70.
	1912	*W 313, p. 70; W 332, p. 20.
	1913	†W 362, p. 16.
	1914	†W 392, p. 17.

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.
Cascade River near Marblemount (49).....	1909	W 272, p. 487.
	1910	W 292, p. 627.
	1911	W 312, p. 670.
	1912	W 332, p. 41.
	1913	W 362, p. 37.
Cedar River at Cedar Falls (24).....	1914-15	W 412, p. 28.
	1916	W 442, p. 29.
	1917	W 462, p. 27.
	1918	W 482, p. 24.
	1919-20	W 512, p. 43.
Cedar River at Cedar Lake, near North Bend (23)....	1898	†W 38, p. 382; W 313, p. 99.
	1899	W 313, p. 99.
	1902	†W 85, p. 220; W 100, p. 466; W 313, p. 100.
	1903	W 100, p. 466; W 313, p. 100.
Cedar River near Landsberg (25). See Cedar River near Ravensdale and Landsberg.		
Cedar River near Ravensdale and Landsberg (25-26).	1895-97	*19th A, pt. 4, p. 501; *W 28, p. 171; W 313, p. 101.
	1898	*20th A, pt. 4, p. 516; *W 28, p. 171; Am. Soc. Civil Eng. Trans., vol. 41 p. 1, June, 1899; W 313, pp. 101, 10.
	1899-1900	W 313, p. 108.
	1901-2	Am. Soc. Civil Eng. Trans., vol. 49, p. 112, December, 1902; W 313, pp. 101, 108.
	1902-3	*W 100, p. 463; W 313, p. 101.
	1904	*W 135, p. 276; W 313, p. 101.
	1905	†W 178, p. 230; *W 214, p. 179; W 313, p. 101.
	1906	*W 214, p. 179; W 313, p. 101.
	1907-8	*W 252, p. 390; W 313, p. 101.
	1909	*W 272, p. 483; W 313, p. 101.
	1910	†W 292, p. 612; W 313, p. 101.
	1911	W 312, p. 652; W 313, p. 101.
	1912	W 332, p. 25; W 313, p. 101.
1914-15	W 412, p. 30.	
1916	W 442, p. 31.	
1917	W 462, p. 29.	
1918	W 482, p. 26.	
1919-20	W 512, p. 46.	
Cedar River at Renton (27).....	1901-7	†W 100, p. 475; W 313, p. 105.
Chelan River at Chelan (91).....	1903	†W 100, p. 387; *W 135, p. 68; W 482, p. 110.
	1904	*W 135, p. 68; W 482, p. 110.
	1905	*W 178, p. 38; W 482, p. 110.
	1906	*W 214, p. 37; W 482, p. 110.
	1907-8	*W 252, p. 128; W 482, p. 110.
	1909	*W 272, p. 137; W 482, p. 110.
	1910	*W 292, p. 133; W 482, p. 110.
	1911	*W 312, p. 148; W 482, p. 110.
	1912	*W 332, p. 170; W 482, p. 110.
	1913	*W 362, p. 170; W 482, p. 110.
	1914	W 392, p. 128.
	1915	W 412, p. 194.
	1916	W 442, p. 148.
	1917	W 462, p. 121.
	1918	W 482, p. 110.
	1919-20	W 512, p. 186.
	Chewack Creek at Winthrop (89).....	1912-13	W 362, p. 163.
Chiwaukum Creek near Chiwaukum (101).....	1911	W 312, p. 162; W 486, p. 32.
Chiwawa River near Leavenworth (100).....	1911	*W 312, p. 161; W 362, p. 181; W 486, p. 30.
	1912	*W 332, p. 184; W 362, p. 181; W 486, p. 30.
	1913	W 362, p. 181; W 486, p. 30.
	1914	*W 392, p. 136; W 486, p. 30.
	1915	W 392, p. 136; W 486, p. 30.
	1910	†W 292, p. 586; W 313, p. 37.
Cispus River near Randle (204).....	1911	W 312, p. 627; W 313, p. 37.
	1912	W 332, p. 702; W 313, p. 37.
Clark Fork at Metaline Falls (65).....	1908-9	†W 272, p. 75.
	1910	†W 292, p. 68.
	1913	*W 362, p. 57; W 442, p. 72.
	1914	W 392, p. 53.
	1915	W 412, p. 110.
	1916	W 442, p. 72.
	1917	W 462, p. 69.
	1918	W 482, p. 66.
1919-20	W 512, p. 118.	

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.
Clark Fork at Newport (64).....	1903-4	*W 135, p. 40; W 532.
	1905	*W 178, p. 15; W 532.
	1903-8	W 252, p. 85; W 532.
	1909	W 272, p. 73; W 532.
	1910	W 292, p. 65; W 532.
	1903-21	W 532.
Clear Creek near Darrington (56).....	1910	†W 292, p. 632; W 312, p. 676.
	1911	W 312, p. 676.
	1912	†W 332, p. 45.
	1913	†W 362, p. 258.
	1914	†W 392, p. 194.
Clear Fork near Lewis (195).....	1907-11	W 312, p. 607; W 313, p. 31.
	1912	W 332, p. 694.
	1913	W 362, p. 699.
	1914	†W 394, p. 142; †W 414, p. 137.
	1915	†W 414, p. 137.
	1916	†W 444, p. 154.
	1917	†W 464, p. 116.
Cle Elum River near Roslyn (121).....	1903	†W 100, p. 384; W 135, p. 95; W 369, p. 62.
	1904	W 135, p. 92; W 369, p. 62.
	1905	W 178, p. 80; W 369, p. 62.
	1906	W 214, p. 55; W 252, p. 167; W 369, p. 62.
	1907-8	W 252, p. 164; W 369, p. 62.
	1909	W 272, p. 178; W 369, p. 62.
	1910	W 292, p. 176; W 369, p. 62.
	1911	W 312, p. 208; W 369, p. 62.
	1912	W 332, p. 223; W 369, p. 62.
	1913	W 362, p. 212; W 369, p. 62.
	1914	W 392, p. 161.
	1915	W 412, p. 223.
	1916	W 442, p. 173.
	1917	W 462, p. 149.
	1918	W 482, p. 142.
	1919-20	W 512, p. 213.
Coal Creek near Lewis (196).....	1911	*W 312, p. 613; *W 313, p. 33; W 414, p. 139.
	1912	*W 332, p. 696; W 414, p. 139.
	1913	*W 362, p. 701; W 414, p. 139.
	1914	†W 394, p. 143; W 414, p. 139.
	1915	W 414, p. 139.
Columbia River at The Dalles, Oreg. (63).....	1878	W 370, p. 16.
	1879-1908	*W 252, p. 67; W 370, p. 16
	1909	*W 272, p. 69; W 370, p. 16.
	1910	*W 292, p. 60; W 370, p. 16.
	1911	W 312, p. 50.
	1912	W 332, p. 533.
	1913	W 362, p. 529.
	1914	W 394, p. 15.
	1915	W 414, p. 15.
	1916	W 444, p. 15.
	1917	W 464, p. 12.
	1918	W 484, p. 6.
	1919-20	W 514.
Columbia River at Trail, B. C. (61).....	1913-16	W 442, p. 49.
	1917	W 462, p. 55.
	1918	W 482, p. 57.
	1919-20	W 512, p. 102.
Columbia River at Wenatchee and Vernita (62).....	1913-17	W 462, p. 57.
	1918	W 482, p. 59.
	1919-20	W 512, p. 104.
Cougar Creek near Glenwood (174).....	1916-17	W 444, p. 89.
Cowlitz River at Lewis (191).....	1911	W 312, p. 602; W 313, p. 30.
	1912	†W 332, p. 692; W 362, p. 697.
	1913	W 362, p. 697.
	1914	†W 394, p. 138.
	1915	W 414, p. 134.
	1916	W 444, p. 150.
	1917	W 464, p. 112.
	1918	W 484, p. 102.
	1919-20	W 514.
Cowlitz River at Mayfield (194).....	1910	†W 292, p. 585; W 313, p. 31.
	1911	W 312, p. 605; W 313, p. 31.
Cowlitz River at Mossy Rock (193).....	1912-14	W 394, p. 139.
	1915	W 414, p. 136.
	1916	W 444, p. 152.
	1917	W 464, p. 114.
Cowlitz River at Randle (192).....	1910	†W 292, p. 584; W 313, p. 30.
	1911	W 312, p. 603; W 313, p. 30.
	1912	†W 332, p. 693; W 313, p. 30.
Crab Creek at Adrian (105).....	1910	*W 292, p. 143. Revised; see p. 199.
	1911	*W 312, p. 166. Revised; see p. 199.
	1912	†W 332, p. 192. Monthly discharge not previously published; see p. 199.

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.
Crab Creek near Warden (106).....	1909	W 272, p. 151.
	1910	W 292, p. 148.
	1911	W 312, p. 168.
	1912	†W 332, p. 193. Monthly discharge not previously published; see p. 200.
Cunningham Creek near Glenwood (172).....	1909	W 253, p. 42.
Curlew Creek near Curlew (68).....	1916-17	W 444, p. 87.
	1917	W 462, p. 94.
Dairy Creek near Glenwood (175).....	1918	W 482, p. 80.
	1919-20	W 512, p. 142.
	1909	†W 253, p. 42.
Deer Creek at Oso (44).....	1916-17	Discharge not previously published; see p. 324.
	1917	†W 462, p. 178; W 482, p. 41.
Dosewallips River at Brinnon (10).....	1918	W 482, p. 41.
	1919-20	W 512, p. 72.
Duckabush River near Duckabush (11).....	1910	†W 292, p. 592.
	1911-12	W 312, p. 633.
Dungeness River at Dungeness (9).....	1910	†W 292, p. 594; W 332, p. 15.
	1911	†W 312, p. 636; W 332, p. 15.
	1912	W 332, p. 15.
Dungeness River near Sequim (8).....	1898	20th A, pt. 4, p. 518; †W 23, pp. 171, 174, 176.
	1899	21st A, pt. 4, p. 438; †W 38, p. 383; †W 39, p. 455.
	1900	22d A, pt. 4, p. 458; †W 51, p. 446; †W 52, p. 522.
	1901	†W 66, p. 138.
East Creek near Elbe (15).....	1897	†W 16, p. 182; 19th A, pt. 4, p. 504; 20th A, pt. 4, p. 518.
	1898	20th A, pt. 4, p. 518; †W 23, pp. 171, 174, 176.
Elwha River at McDonald Bridge, near Port Angeles (6).	1918	W 512, p. 23.
	1919-20	W 512, p. 23.
Elwha River near Port Angeles (7).....	1897	†19th A, pt. 4, p. 505; 20th A, pt. 4, p. 519; †W 16, p. 183.
	1898	20th A, pt. 4, p. 519; †W 23, pp. 171, 174, 176.
	1899	21st A, pt. 4, p. 439; †W 38, p. 384; †W 39, p. 455.
	1900	22d A, pt. 4, p. 459; †W 51, p. 447; †W 52, p. 523.
Elwha River near Port Angeles (7).....	1901	†W 66, pp. 139, 177; W 75, p. 207.
	1919-20	W 512, p. 15.
Entiat River at Entiat (93).....	1911	W 312, p. 632.
	1912	†W 332, p. 14.
	1910	†W 292, p. 136.
Foss River near Skyomish (30).....	1911	W 312, p. 152.
	1912	W 332, p. 174.
	1913	W 362, p. 174.
	1914	W 392, p. 129.
	1915	W 412, p. 196.
	1916	W 442, p. 150.
	1917	W 462, p. 123.
	1918	W 482, p. 120.
	1919-20	W 512, p. 188.
	1911	†W 312, p. 657; W 332, p. 29.
	1912	W 332, p. 29.
	Glacier Creek near Lewis (203).....	1911	*W 313, p. 37. Revised; see p. 356.
1912		*W 313, p. 37; †W 362, p. 752. Revised; see p. 356.
Grande Ronde River at Zindel (152).....	1913	†W 362, p. 752.
	1904	†W 135, p. 229; W 312, p. 429.
	1905	†W 178, p. 155; W 312, p. 429.
	1906	†W 214, p. 111; W 312, p. 429.
	1907-8	†W 252, p. 273; W 312, p. 429.
	1909	†W 272, p. 347; W 312, p. 429.
	1910	†W 292, p. 437; W 312, p. 429.
	1911	W 312, p. 429.
	1912	W 332, p. 506.
	1913	W 362, p. 508.
Green River at Kanaskat (22).....	1911-12	W 312, p. 651.
Greenwater River near Enumclaw (21).....	1912	W 313, p. 86; W 332, p. 23.
Hagar Creek near Lewis (199).....	1911	*W 313, p. 35; †W 394, p. 153. Revised; see p. 351.
	1912	*W 313, p. 35; †W 362, p. 752; †W 394, p. 153. Discharge October-December revised; monthly discharge January-September not previously published; see p. 352.

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.
Hagar Creek near Lewis (199)—(Continued).....	1913	†W 362, p. 752; †W 394, p. 153. Monthly discharge not previously published; see p. 352.
	1914	†W 394, p. 153. Monthly discharge not previously published; see p. 352.
Hagar Creek, North Fork, near Lewis (200).....	1911	*W 313, p. 35; †W 394, p. 155. Revised; see p. 352
	1912	*W 313, p. 35; †W 362, p. 752; †W 394, p. 155. Discharge October-December revised; monthly discharge January-September not previously published; see p. 352
	1913	†W 362, p. 752; †W 394, p. 155. Monthly discharge not previously published; see p. 352.
	1914	†W 394, p. 153. Monthly discharge not previously published; see p. 353.
Hall Creek at Inchelium (69).....	1913	W 362, p. 124.
	1914	*W 392, p. 103; W 412, p. 162.
	1915	W 412, p. 162.
	1916	W 442, p. 121.
	1917	W 462, p. 95.
	1918	W 482, p. 82.
	1919-20	W 512, p. 145.
Icicle Creek near Leavenworth (102).....	1911	W 312, p. 164; W 486, p. 33.
	1912	W 332, p. 186; W 486, p. 33.
	1913	*W 362, p. 184; W 486, p. 33.
	1914-15	W 392, p. 138; W 486, p. 33.
Johnson Creek near Lewis (202).....	1907-11	W 312, p. 621; W 313, p. 36.
	1912	W 332, p. 700.
	1913	W 362, p. 705.
	1914	W 394, p. 151.
	1919-20	W 514.
Johnson Creek below West Fork, near Lewis (201)...	1911	*W 313, p. 35; †W 394, p. 149. Revised; see p. 353.
	1912	*W 313, p. 35; W 362, p. 752; W 394, p. 149. Revised; see p. 353.
	1913	†W 362, p. 752; †W 394, p. 149.
	1914	†W 394, p. 149.
Johnson Creek near Riverside (84).....	1903	W 100, p. 392.
	1904	W 135, p. 61.
	1905-6	W 214, p. 33.
	1907	W 252, p. 121.
Kachess River near Easton (120).....	1903	†W 100, p. 385; W 369, p. 60.
	1904	*W 135, p. 90; W 369, p. 60.
	1905	W 178, p. 78; W 252, p. 160; W 369, p. 60.
	1906	W 214, p. 53; W 252, p. 160; W 369, p. 60.
	1907-8	*W 252, p. 158; W 369, p. 60.
	1909	W 272, p. 173; W 369, p. 60.
	1910	W 292, p. 172; W 369, p. 60.
	1911	W 312, p. 205; W 369, p. 60.
	1912	W 332, p. 220; W 369, p. 60.
	1913	W 362, p. 208; W 369, p. 60.
	1914	W 392, p. 159.
	1915	W 412, p. 220.
	1916	W 442, p. 170.
	1917	W 462, p. 146.
	1918	W 482, p. 138.
	1919-20	W 512, p. 209.
Kalama River near Kalama (189).....	1911	†W 312, p. 595; W 444, p. 141.
	1912	†W 332, p. 690; W 444, p. 141.
	1913	†W 362, p. 694; W 444, p. 141.
	1916	W 444, p. 141.
	1917	W 464, p. 109.
	1918	W 484, p. 101.
	1919-20	W 514.
Kettle River at Boyds (67).....	1914	W 392, p. 102.
	1915	W 412, p. 160.
Klickitat River below Glenwood (166).....	1914	W 414, p. 87.
Klickitat River near Glenwood (165).....	1905	†W 253, p. 36.
	1907-8	†W 253, p. 36.
	1909-10	†W 253, p. 42; W 292, p. 511.
	1911	W 312, p. 522.
	1912	W 332, p. 620.
	1913	W 362, p. 614.
	1914	W 394, p. 82.
	1915	W 414, p. 85.
	1916	W 444, p. 82.
	1917	W 464, p. 68.
	1918	W 484, p. 59.
	1919-20	W 514.

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.
Klickitat River at Klickitat (167).....	1909	W 253, p. 40; W 272, p. 417.
	1910	W 292, p. 514.
	1911	W 312, p. 524.
	1912	W 332, p. 622.
Klickitat River near Lyle (168).....	1907	W 292, p. 516.
	1908-9	†W 272, p. 416; W 292, p. 516.
	1910	W 292, p. 516.
	1912	W 332, p. 624.
Klickitat River above Pearl Creek, near Glenwood (164).	1913	W 362, p. 616.
	1909	†W 253, p. 42.
	1910	W 292, p. 509.
Klickitat River, West Fork, near Glenwood (171)....	1916-17	W 444, p. 81.
	1909	W 253, p. 42.
	1910	W 292, p. 520.
Lake Creek at mouth, near Lewis (198).....	1916-17	W 444, p. 86.
	1907-11	W 312, p. 615; W 313, p. 33.
	1912	W 332, p. 698.
	1913	W 362, p. 703.
	1914	W 394, p. 147.
Lake Creek at outlet of Packwood Lake, near Lewis (197).	1915	W 414, p. 145.
	1911-12	*W 313, p. 33; †W 362, p. 752; W 394 p. 145.
	1913	†W 362, p. 752; W 394, p. 145.
	1914	W 394, p. 145.
	1915	W 414, p. 143.
	1916	W 444, p. 155.
	1917	W 464, p. 117.
	1918	W 484, p. 104.
	1919-20	W 514.
	Latah Creek at Tekoa (76).....	1904	W 135, p. 51.
1905		†W 178, p. 27.
Latah Creek North Fork, at Tekoa (77).....	1904	W 135, p. 55.
	1905	†W 178, p. 29.
Lewis River near Amboy (184).....	1907	†W 253, p. 71.
	1911	†W 312, p. 594; W 394, p. 134.
	1912	†W 332, p. 689; W 394, p. 134.
	1913	†W 362, p. 693; W 394, p. 134.
	1914	W 394, p. 134.
	1915	W 414, p. 132.
	1916	W 444, p. 139.
	1917	W 464, p. 108.
	1918	W 484, p. 99.
	1919-20	W 514.
Lewis River at Ariel (185).....	1909	W 253, p. 66; W 272, p. 471.
Lewis River above Muddy River, near Cougar (182).	1907	W 253, p. 71.
	1909	W 253, p. 64; W 272, p. 469.
Lewis River at Peterson ranch, near Cougar (183).....	1909	W 253, p. 65; W 272, p. 470.
	1910	†W 292, p. 532.
	1911	†W 312, p. 593.
	1912	†W 332, p. 688.
	1910	†W 292, p. 522.
Little Klickitat River near Goldendale (176).....	1911	W 312, p. 526.
	1912	W 332, p. 626.
	1903	†W 100, p. 398.
Little Spokane River near Spokane (78).....	1904	†W 135, p. 57.
	1905	†W 178, p. 31.
	1911	†W 312, p. 135.
	1912	†W 332, p. 153.
	1913	W 362, p. 146.
	1911	W 486, p. 27.
Little Wenatchee River near Chiwaukum (94).....	1918	W 482, p. 10.
	1919-20	W 512, p. 13.
Lyre River at Piedmont (5).....	1909	W 272, p. 186; W 369, p. 85.
	1910	W 292, p. 185; W 369, p. 85.
	1911	W 312, p. 216; W 369, p. 85.
	1912	W 332, p. 230.
	1913	W 362, p. 217.
	1914	W 392, p. 164.
Methow River at Pateros (88).....	1903	†W 100, p. 387; *W 135, p. 65; W 482, p. 99.
	1904	*W 135, p. 65; W 482, p. 99.
	1905	*W 178, p. 35; W 482, p. 99.
	1906	*W 214, p. 36; W 482, p. 99.
	1907-8	*W 252, p. 125; W 482, p. 99.
	1909	*W 272, p. 134; W 482, p. 99.
	1910	*W 292, p. 130; W 482, p. 99.
	1911	*W 312, p. 143; W 482, p. 99.
	1912	*W 332, p. 164; W 482, p. 99.
	1913	*W 362, p. 162; W 482, p. 99.
	1914	*W 392, p. 124; W 482, p. 99.
	1915	W 412, p. 189; W 482, p. 99.

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.
Methow River at Pateros (88)—(Continued).....	1916	W 442, p. 146.
	1917	W 462, p. 118.
	1918	W 482, p. 99.
	1919-20	W 512, p. 180.
Methow River at Twisp (87).....	1919-20	W 512, p. 178.
Methow River near Winthrop (86).....	1912	W 332, p. 16.
Middle Fork. See name of main stream.		
Mill Creek near Walla Walla (161).....	1913-14	W 394, p. 18.
	1915	W 414, p. 19.
	1916	W 444, p. 19.
	1917	W 464, p. 15.
	1911	†W 312, p. 659; W 332, p. 31.
Miller Creek near Miller River (formerly Berlin) (31)..	1912	W 332, p. 31.
	1913	W 362, p. 24.
	1914	W 392, p. 25.
	1915	W 412, p. 34.
	1916	W 442, p. 35.
	1917	W 462, p. 33.
	1918	†W 482, p. 30.
	1919-20	†W 512, p. 56.
	1907	†W 253, p. 71.
	1909	W 253, p. 67; W 272, p. 472.
Muddy River near Cougar (186).....	1909	W 272, p. 190; W 369, p. 65.
	1910	*W 292, p. 189; W 369, p. 65.
	1911	W 312, p. 219; W 369, p. 65.
	1912	W 332, p. 233; W 369, p. 65.
	1913	W 362, p. 218.
	1914	W 392, p. 166.
	1894	†B 131, p. 73.
Naches River at Anderson ranch, near Nile (127).....	1895	†B 140, p. 244.
	1896	†W 11, p. 84; 18th A, pt. IV, p. 355.
	1897	†W 16, p. 174.
	1898	†W 28, pp. 158, 164; 20th A, pt. IV, p. 503; W 369, p. 71.
	1899	†W 38, p. 372; *21st A, pt. IV, p. 425; W 369, p. 71.
	1900	†W 51, p. 440; *22d A, pt. IV, p. 445; W 369, p. 71.
	1901	†W 66, p. 133; *W 75, p. 202; W 369, p. 71.
	1902	W 85, p. 191; W 369, p. 71.
	1903	W 100, p. 379; W 369, p. 71.
	1904	*W 135, p. 98; W 369, p. 71.
	1905	W 178, p. 86; W 369, p. 71.
	1906	*W 214, p. 58; W 252, p. 175; W 369, p. 71.
	1907-8	W 252, p. 171; W 369, p. 71.
	1909	W 272, p. 197; W 369, p. 71.
	1910	W 292, p. 196; W 369, p. 71.
	1911	W 312, p. 227; W 369, p. 71.
	1912	W 332, p. 241; W 369, p. 71.
1913	†W 362, p. 260; W 369, p. 71.	
Naches River at Oak Flat, near Nile (128).....	1904	W 135, p. 95; W 369, p. 67.
	1905	*W 178, p. 82; W 369, p. 67.
	1906	W 214, p. 56; W 252, p. 170; W 369, p. 67.
	1907-8	W 252, p. 167; W 369, p. 67.
	1909	W 272, p. 192; W 369, p. 67.
	1910	W 292, p. 191; W 369, p. 67.
	1911	W 312, p. 222; W 369, p. 67.
	1912	W 332, p. 236; W 369, p. 67.
	1913	W 362, p. 221; W 369, p. 67.
	1914	W 392, p. 168.
Naches River below Tieton River, near Naches (129)..	1915	W 412, p. 225.
	1916	W 442, p. 175.
	1917	W 462, p. 151.
	1905	W 178, p. 84.
	1909	*W 272, p. 194; W 369, p. 69.
	1910	*W 292, p. 193; W 369, p. 69.
	1911	*W 312, p. 224; W 369, p. 69.
	1912	*W 332, p. 238; W 369, p. 69.
1913	†W 362, p. 260; W 369, p. 69.	
1915-17	W 462, p. 153.	
1918	W 482, p. 143.	
1919-20	W 512, p. 215.	
Nason Creek at Nason (99).....	1911	*W 312, p. 159; W 486, p. 30.
	1911	W 312, p. 137.
Nespelem River at Nespelem (80).....	1912	W 332, p. 156.
	1913	W 362, p. 150.
	1914	W 392, p. 118.
	1915	W 412, p. 180.
	1916	W 442, p. 138.

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.	
Nespelem River at Nespelem (80)—(Continued).....	1917	W 462, p. 111.	
	1918	W 482, p. 91.	
	1919-20	W 512, p. 165.	
	New Reservation canal at Parker (141).....	1904	W 135, p. 123.
		1905	†W 178, p. 60; W 252, p. 192.
		1906	†W 214, p. 68; W 252, p. 192.
		1907-8	W 252, p. 192.
		1909	W 272, p. 233.
		1910	W 292, p. 242.
		1911	W 312, p. 184.
1912		W 332, p. 208.	
1913		W 362, p. 242.	
1914		W 392, p. 182.	
1915	W 412, p. 239.		
1916	W 442, p. 186.		
1917	W 462, p. 165.		
1918	W 482, p. 155.		
1919-20	W 512, p. 235.		
Nisqually River near Ashford (13).....	1910	†W 292, p. 598; W 313, p. 58.	
	1911	W 312, p. 639; W 313, p. 58.	
	1912	†W 332, p. 17; W 313, p. 58.	
	1913	†W 362, p. 16.	
	1914	†W 392, p. 17.	
Nisqually River near La Grande (14).....	1915	†W 412, p. 252.	
	1906-10	W 292, p. 599; W 313, p. 58.	
	1911	W 312, p. 641; W 313, p. 58.	
1912	W 313, p. 58; †W 332, p. 18.		
North Fork. See name of main stream.			
Nooksack River, North Fork, near Glacier (60).....	1910	†W 292, p. 638.	
	1911	W 312, p. 685.	
	1912	†W 332, p. 273.	
Ohanapecosh River near Lewis (190).....	1907-11	*W 312, p. 596; *W 313, p. 28; W 444, p. 143.	
	1912	*W 332, p. 691; W 444, p. 143.	
	1913	*W 362, p. 695; W 444, p. 143.	
	1914	†W 394, p. 137.	
	1915	†W 414, p. 133.	
	1916	†W 444, p. 143.	
	1917	†W 464, p. 111.	
	1911	†W 312, p. 138; W 362, p. 152.	
	1912	†W 332, p. 158; W 362, p. 152.	
	1913	W 362, p. 152.	
1914	W 392, p. 119.		
1915	W 412, p. 182.		
1916	W 442, p. 140.		
1917	W 462, p. 113.		
1918	W 482, p. 93.		
1919-20	W 512, p. 168.		
Old Reservation canal at Parker (142).....	1904	W 135, p. 125.	
	1905	†W 178, p. 61.	
	1906	W 214, p. 68.	
	1907-8	W 252, p. 197.	
	1909	W 272, p. 236.	
	1910	W 292, p. 244.	
	1911	W 312, p. 193.	
	1912	W 332, p. 210.	
	1913	W 362, p. 244.	
	1914	W 392, p. 184.	
	1915	W 412, p. 241.	
	1916	W 442, p. 187.	
	1917	W 462, p. 167.	
	1918	W 482, p. 157.	
	1919-20	W 512, p. 237.	
Palouse River at Elberton (157).....	1904	W 135, p. 240.	
Palouse River at Hooper (159).....	1905	†W 178, p. 169.	
	1897	†19th A, pt. IV, p. 458; †W 16, p. 172; 20th A, pt. IV, p. 489.	
	1898	†W 28, pp. 155, 162, 163, 170; 20th A, pt. IV, p. 489.	
	1899	†W 38, p. 360; 21st A, pt. IV, p. 414; †W 39, p. 454.	
	1900	†W 51, p. 443; 22d A, pt. IV, p. 451; †W 52, p. 522.	
	1901	†W 66, pp. 136, 177; W 75, p. 206.	
	1902	W 85, p. 203.	
	1903	†W 100, p. 413.	
	1904	W 135, p. 243.	
	1905	W 178, p. 171.	
	1906	*W 214, p. 119; W 252, p. 281.	
	1907-8	W 252, p. 281.	
	1909	W 272, p. 353.	
1910	W 292, p. 448.		
1911	W 312, p. 453.		

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.
Palouse River at Hopper (159)—(Continued).....	1912	W 332, p. 529.
	1913	*W 362, p. 524; W 413, p. 204.
	1914	†W 393, p. 239; W 413, p. 204.
	1915	W 413, p. 204.
	1916	W 443, p. 178.
Palouse River near Potlatch, Idaho (156).....	1915	W 413, p. 200.
	1916	W 443, p. 174.
	1917	W 463, p. 155.
	1918	W 483, p. 162.
	1919-20	W 513.
Palouse River near Winona (158).....	1915	W 413, p. 202.
	1916	W 443, p. 176.
	1917	W 463, p. 157.
Pearl Creek near Glenwood (169).....	1909	†W 253, p. 42.
	1916-17	W 444, p. 84.
Peshastin Creek at Blewett (103).....	1911	†W 312, p. 165; W 486, p. 34.
	1912	†W 332, p. 188; W 486, p. 34.
Peshastin Creek below Ingalls Creek, near Leavenworth (104).	1911-12	W 332, p. 189; W 486, p. 35.
	1911-12	W 312, p. 663.
Pilchuck River near Granite Falls (41).....	1909	W 253, p. 68; W 272, p. 474.
Pine Creek near Cougar (187).....	1915	W 412, p. 19.
Puyallup River at Alderton (17).....	1916	W 442, p. 22.
	1917	W 462, p. 19.
	1918	W 482, p. 16.
	1919-20	W 512, p. 31.
	1909-11	W 312, p. 643; W 313, p. 68.
	1912	W 313, p. 68; W 332, p. 18.
	1913	W 362, p. 17.
	1914	W 392, p. 18.
	1915	W 412, p. 17.
	1916	W 442, p. 20.
Puyallup River near Electron (16).....	1917	W 462, p. 17.
	1918	W 482, p. 14.
	1919-20	W 512, p. 28.
	1914-15	W 412, p. 21.
	1916	W 442, p. 24.
	1917	W 462, p. 21.
	1918	W 482, p. 18.
	1919-20	W 512, p. 33.
	1912	W 332, p. 12.
	1913	W 362, p. 14.
Quinnault River at Quinnault Lake (1).....	1914	W 392, p. 15.
	1915	W 412, p. 15.
	1916	W 442, p. 14.
	1917	W 462, p. 13.
	1918	W 482, p. 6.
	1919-20	W 512, p. 6.
	1910	†W 292, p. 136.
	1911	W 312, p. 149.
Railroad Creek at Lucerne (92).....	1912	W 332, p. 172.
	1913	W 362, p. 173.
	1911-12	†W 332, p. 275.
	1913	W 362, p. 256.
	1914	W 392, p. 190.
Revervation drain at Alfalfa (148).....	1915	W 412, p. 249.
	1916	W 442, p. 195.
	1917	W 462, p. 174.
	1918	W 482, p. 161.
	1919-20	W 512, p. 248.
	1911-12	W 332, p. 542.
	1913	W 362, p. 540.
	1903	†W 100, p. 415; W 135, p. 247.
Rock Creek near Goldendale (162).....	1904	W 135, p. 247.
	1905	W 178, p. 173.
	1914-15	W 413, p. 207.
	1916	W 443, p. 179.
	1917	W 463, p. 159.
Rocky Ford Creek near Ephrata (107).....	1909	*W 272, p. 148. Revised, see p. 201.
	1910	W 292, p. 146.
	1911	W 312, p. 170.
	1912	W 332, p. 195.
	1903	W 100, p. 389.
Salmon Creek near Conconully (85).....	1904	W 135, p. 63.
	1905	W 178, p. 32.
	1906	†W 214, p. 33; W 252, p. 122.
	1907-8	W 252, p. 122.
	1909	W 272, p. 132.
	1910	W 292, p. 126.
	1911	W 312, p. 139.
	1912	*W 332, p. 160; *W 362, p. 160; W 412, p. 186.

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.			
Salmon Creek near Conconully (85)—(Continued)....	1913	*W 362, p. 160; W 412, p. 186.			
	1914	*W 392, p. 122; W 412, p. 186.			
	1915	W 412, p. 186.			
	1916	W 442, p. 144.			
	1917	W 462, p. 116.			
	1918	W 482, p. 97.			
	1919-20	W 512, p. 175.			
	Sanpoil River at Keller (79).....	1911	W 312, p. 135.		
		1912	W 332, p. 154.		
		1913	W 362, p. 149.		
1914		W 392, p. 117.			
1915		W 412, p. 178.			
1916		W 442, p. 136.			
1917-18		W 462, p. 109.			
Satus Creek near Toppenish (149).....		1908	†W 252, p. 192; W 272, p. 228.		
		1909	W 272, p. 228.		
		1910	W 292, p. 227.		
	1911	W 312, p. 260.			
	1912	W 332, p. 270.			
	1913	W 362, p. 254; W 392, p. 192.			
	1914	W 392, p. 192.			
	1915	W 412, p. 250.			
	1916	W 442, p. 197.			
	1917	W 462, p. 176.			
Sauk River above Clear Creek, near Darrington (52)..	1918	W 482, p. 167.			
	1919-20	W 512, p. 251.			
	1910	†W 292, p. 630; W 312, p. 672.			
	1911	W 312, p. 672.			
	1912	†W 332, p. 43.			
	1913	W 362, p. 39.			
	1914	†W 392, p. 194.			
	Sauk River at Darrington (53).....	1914-15	W 412, p. 95.		
		1916	W 442, p. 55.		
		1917	W 462, p. 51.		
1918		W 482, p. 51.			
1919		W 512, p. 94.			
Sauk River, North Fork, near Barlow Pass (50).....		1918	W 482, p. 47.		
		1919-20	W 512, p. 89.		
		Sauk River, South Fork, near Barlow Pass (55).....	1918	W 482, p. 53.	
			1919-20	W 512, p. 96.	
			Sauk River near Suiattle Crossing, near Sauk (54)....	1910	†W 292, p. 631; W 312, p. 674.
	1911			W 312, p. 674.	
	1912			W 332, p. 43.	
	Sauk River above Whitechuck River, near Darrington (51).			1910	†W 292, p. 629.
				1918	W 482, p. 49.
				1919-20	W 512, p. 91.
Simcoe Creek near Fort Simcoe (147).....				1909	W 272, p. 226.
				1910	W 292, p. 224.
		1911		W 312, p. 258.	
		1912		W 332, p. 268.	
		1913	W 362, p. 251.		
		1914	W 392, p. 188.		
		1915	W 412, p. 247.		
	1916	W 412, p. 247; W 442, p. 193.			
	1917	W 462, p. 172.			
	1918	W 482, p. 165.			
Smilkameen River near Oroville (82).....	1919-20	W 512, p. 245.			
	1911	†W 312, p. 138; W 362, p. 156.			
	1912	†W 332, p. 159; W 362, p. 156.			
	1913	W 362, p. 156.			
	1914	W 392, p. 121.			
	1915	W 412, p. 184.			
	1916	W 442, p. 142.			
	1917	W 462, p. 115.			
	1918	W 482, p. 95.			
	1919-20	W 512, p. 170.			
Sinlahekin Creek near Loomis (83).....	1903	†W 100, p. 394.			
	1904	W 135, p. 59.			
	1905	†W 178, p. 31.			
	Skagit River near Marblemount (46).....	1909	*W 272, p. 485; W 512, p. 80.		
		1910	*W 292, p. 620; W 512, p. 80.		
1911		*W 312, p. 666; W 512, p. 80.			
1912		*W 332, p. 37; W 512, p. 80.			
1913		*W 362, p. 33; W 512, p. 80.			
1914		*W 392, p. 33; W 512, p. 80.			
Skagit River at Reflector Bar, near Marblemount (45)		1914	W 392, p. 31.		
		1915	W 412, p. 89.		
		1916	W 442, p. 51.		
		1917	W 462, p. 47.		
	1918	W 482, p. 43.			
	1919-20	W 512, p. 77.			

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.	
Skagit River near Sedro Woolley (47).....	1908-10	W 292, p. 622.	
	1911	W 312, p. 668.	
	1912	W 332, p. 39.	
	1913	W 362, p. 35.	
	1914	W 392, p. 34.	
	1915	W 412, p. 91.	
	1916	W 442, p. 53.	
	1917	W 462, p. 49.	
	1918	W 482, p. 45.	
	1919-20	W 512, p. 85.	
Skykomish River, North Fork, near Hoodspout (12)..	1910	†W 292, p. 596.	
	1911	†W 312, p. 637.	
	1913-16	W 442, p. 16.	
	1917	W 462, p. 15.	
	1918	W 482, p. 12.	
	1919-20	W 512, p. 18.	
Skykomish River, North Fork, at Index (32).....	1910	†W 292, p. 616.	
	1911	W 312, p. 660.	
	1912	*W 332, p. 33; W 412, p. 36.	
	1913	*W 362, p. 25; W 412, p. 36.	
	1914	*W 392, p. 26; W 412, p. 36.	
	1915	W 412, p. 36.	
	1916	W 442, p. 37.	
	1917	W 462, p. 35.	
	1918	W 482, p. 31.	
	1919-20	W 512, p. 58.	
Skykomish River, South Fork, near Index (28).....	1902	†W 85, p. 222; *W 100, p. 471; W 512, p. 48.	
	1903	*W 100, p. 471; W 512, p. 48.	
	1904	*W 135, p. 278; W 512, p. 48.	
	1905	†W 178, p. 232; W 512, p. 48.	
	1911	*W 312, p. 655; W 512, p. 48.	
	1912	*W 332, p. 27; W 512, p. 48.	
	1913	*W 362, p. 22; W 512, p. 48.	
	1914	*W 392, p. 23; W 512, p. 48.	
	1915	W 412, p. 32.	
	1916	W 442, p. 33.	
	1917	W 462, p. 31.	
	1918	W 482, p. 28.	
	1919-20	W 512, p. 48.	
	Skykomish River at Sultan (29).....	1910	†W 292, p. 615.
	1911	W 312, p. 656.	
Snake River near Burbank (151).....	1907-8	†W 272, p. 271.	
	1909	†W 272, p. 271; †W 292, p. 324; W 312, p. 291.	
	1910	†W 292, p. 324; W 312, p. 291.	
	1911	W 312, p. 291.	
	1912	*W 332, p. 308; W 362, p. 294.	
	1913	W 362, p. 294.	
	1914	W 393, p. 44.	
	1915	W 413, p. 44.	
	1916	*W 443, p. 45; W 463, p. 38.	
	1917	W 463, p. 38.	
Snake River at Riparia (150).....	1916	*W 443, p. 43; W 463, p. 36.	
	1917	W 463, p. 36.	
	1918	W 483, p. 29.	
	1919-20	W 513.	
Snoqualmie River, Middle Fork, near North Bend (34).	1907-15	W 412, p. 40.	
	1916	W 442, p. 43.	
	1917	W 462, p. 39.	
	1918	W 482, p. 35.	
Snoqualmie River, North Fork, near North Bend (37).	1919-20	W 512, p. 63.	
	1907-15	W 412, p. 56.	
	1916	W 442, p. 45.	
	1917	W 462, p. 41.	
	1918	W 482, p. 37.	
	1919-20	W 512, p. 66.	
	1914-15	W 412, p. 54.	
	1916	†W 442, p. 199.	
	1898-1900	W 412, p. 48.	
	1902	†W 85, p. 220; *W 100, p. 463; W 412, p. 48.	
Snoqualmie River, South Fork, near Garcia (38)....	1903	*W 100, p. 468; W 412, p. 48.	
	1904	W 135, p. 281; W 412, p. 48.	
	1905	†W 178, p. 233.	
	1906	†W 214, p. 178.	
	1907-19	Not previously published; see pp. 78-80.	
	1910-15	W 412, p. 64.	
	1917	W 462, p. 43.	
Snoqualmie River, South Fork, at North Bend (39).	1907-15	W 412, p. 70.	
	1916	W 442, p. 17.	
	1917	W 462, p. 43.	
	1918	W 482, p. 39.	
1919-20	W 512, p. 69.		

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.
Soleduck River near Fairholm (2).....	1918	W 482, p. 8.
	1919-20	W 512, p. 9.
Soleduck River near Quillayute (3).....	1897-98	20th A, pt. IV, p. 523.
	1897	20th A, pt. IV, p. 523; †W 16, p. 184.
	1898	20th A, pt. IV, p. 523; †W 28, pp. 171, 175, 176.
	1899	21st A, pt. IV, p. 442; †W 38, p. 386; †W 39, p. 455.
	1900	22d A, pt. IV, p. 461; †W 51, p. 449; †W 52, p. 523.
	1901	†W 66, pp. 141, 177; W 75, p. 209.
South Fork. See name of main stream.		
Spokane River below Little Falls, near Long Lake (75).	1913	W 362, p. 138.
	1914	W 392, p. 112.
	1915	W 412, p. 171.
	1916	W 442, p. 130.
	1917	W 462, p. 104.
	1918	W 482, p. 89.
	1919-20	W 512, p. 157.
Spokane River at Post Falls, Idaho (72).....	1913	W 362, p. 131.
	1914	W 392, p. 109.
	1915	W 412, p. 167.
	1916	W 442, p. 126.
	1917	W 462, p. 101.
	1918-20	W 512, p. 151.
Spokane River at Spokane (74).....	1891-96	†18th A, pt. IV; †W 11, p. 85; *W 272 p. 120.
	1897	*19th A, pt. IV, p. 487; †W 16, p. 177.
	1898	*20th A, pt. IV, p. 510; †W 28, pp. 159, 166, 169, 170.
	1899	*21st A, pt. IV, p. 424; †W 38, p. 370; †W 39, p. 454.
	1900	*22d A, pt. IV, p. 442; †W 51, p. 438; †W 52, p. 522.
	1901	†W 66, pp. 133, 177; *W 75, p. 200.
	1902	*W 85, p. 196.
	1903	†W 100, p. 396.
	1904	*W 135, p. 46.
	1905	W 178, p. 25.
	1906	W 214, p. 31.
	1907-8	W 252, p. 117.
	1909	W 272, p. 120.
	1910	W 292, p. 123.
	1911	W 312, p. 131.
	1912	W 332, p. 149.
	1913	W 362, p. 136.
	1914	W 392, p. 110.
	1915	W 412, p. 169.
	1916	W 442, p. 128.
	1917	W 462, p. 103.
	1918	W 482, p. 87.
	1919-20	W 512, p. 154.
Spokane River at Trent (73).....	1912	W 332, p. 147.
	1913	W 362, p. 134.
Spokane Valley Land & Water Co.'s canal at Post Falls, Idaho (72).	1911	W 312, p. 133.
	1912	W 332, p. 151.
	1913	W 362, p. 144.
	1914	W 392, p. 115.
	1915	W 412, p. 176.
	1916	W 442, p. 134.
	1917	W 462, p. 107.
	1918-20	W 512, p. 163.
Squaw Creek near Goldendale (163).....	1912	W 332, p. 544.
Stehekin River at Stehekin (90).....	1913	W 362, p. 542.
	1910	†W 292, p. 132.
	1911	W 312, p. 145.
	1912	W 332, p. 167.
	1913	W 362, p. 168.
	1914	*W 392, p. 125; W 412, p. 190.
	1915-16	W 412, p. 190.
Stetattle Creek near Marblemount (48).....	1914	W 392, p. 36.
	1915	W 412, p. 93.
	1918	†W 482, p. 169.
Stilaguamish River, South Fork, at Granite Falls (43).	1919-20	†W 512, p. 254.
	1911	W 312, p. 665.
	1914	W 392, p. 29.
	1915	W 412, p. 87.
	1916	W 412, p. 87; †W 442, p. 199
Stilaguamish River, South Fork, near Silverton (42).	1910	†W 292, p. 617; *W 362, p. 127. Revised; see p. 92.
	1911	†W 312, p. 664; *W 362, p. 127. Revised; see p. 92.

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.
Stilaguamish River, South Fork, near Silverton (42)—(Continued.)	1912	†W 332, p. 35; *W 362, p. 27. Revised; see p. 92.
	1913	*W 362, p. 27. Revised; see p. 92.
	1914	*W 392, p. 28. Revised; see p. 93.
	1915	W 412, p. 85.
	1916	W 442, p. 49.
	1917	W 462, p. 45.
Stranger Creek at Inchelium (71).....	1914	W 392, p. 105.
	1915	W 412, p. 164.
	1916	W 442, p. 123.
	1917	W 462, p. 99.
Stranger Creek at Meteor (70).....	1916	†W 442, p. 199; W 462, p. 97.
	1917	W 462, p. 97.
	1918	W 482, p. 84.
Sullivan Creek near Metaline Falls (66).....	1919-20	W 512, p. 147.
	1912-13	W 362, p. 121.
	1914	W 392, p. 100.
	1915	W 412, p. 158.
	1916	W 442, p. 119.
	1917	W 462, p. 92.
Sultan River near Sultan (33).....	1918	W 482, p. 78.
	1919-20	W 512, p. 140.
	1911-14	W 442, p. 38.
	1915	†W 412, p. 252; W 442, p. 33.
	1916	W 442, p. 38.
	1917	W 462, p. 37.
Sunnyside canal near Parker (143).....	1918	W 482, p. 33.
	1919-20	W 512, p. 61.
	1904	W 135, p. 127.
	1905	†W 178, p. 61.
	1906	W 214, p. 67; W 252, p. 201.
	1907-8	W 252, p. 201.
	1909	W 272, p. 237.
	1910	W 292, p. 246.
	1911	W 312, p. 186.
	1912	W 332, p. 212.
	1913	W 362, p. 246.
	1914	W 392, p. 185.
	1915	W 412, p. 243.
	1916	W 442, p. 189.
	1917	W 462, p. 168.
Swamp Creek near Glenwood (170).....	1918	W 482, p. 159.
	1919-20	W 512, p. 240.
	1909	†W 253, p. 42.
Swauk Creek near Cle Elum (123).....	1916-17	W 444, p. 84.
	1909	W 272, p. 182; W 369, p. 85.
	1910	W 292, p. 181; W 369, p. 85.
	1911	W 312, p. 213; W 369, p. 85.
Swift Creek near Cougar (188).....	1912	†W 332, p. 228.
	1909	W 253, p. 69; W 272, p. 475.
	1909	W 272, p. 184; W 369, p. 84.
Taneum Creek near Thorp (124).....	1910	W 292, p. 183; W 369, p. 84.
	1911	†W 312, p. 215; W 369, p. 84.
	1912	†W 332, p. 229; W 369, p. 84.
	1909	W 272, p. 180; W 369, p. 85.
Teanaway River near Cle Elum (122).....	1910	W 292, p. 179; W 369, p. 85.
	1911	W 312, p. 211; W 369, p. 85.
	1912	W 332, p. 226; W 369, p. 85.
	1913	W 362, p. 215.
	1914	W 392, p. 163.
	1910	W 292, p. 278.
Tieton canal near Naches (135).....	1911	W 312, p. 241.
	1912	W 332, p. 254.
	1913	W 362, p. 234.
	1914	W 392, p. 178.
	1915	W 412, p. 235.
	1916	W 442, p. 181.
	1917	W 462, p. 161.
	1918	W 482, p. 150.
	1919-20	W 512, p. 227.
	1906	†W 214, p. 61.
Tieton River at headworks of Tieton canal, near Naches (135).	1907-8	W 252, p. 177; W 369, p. 79.
	1909	W 272, p. 207; W 369, p. 79.
	1910	W 292, p. 206; W 369, p. 79.
	1911	W 312, p. 240; W 369, p. 79.
	1912	W 332, p. 253; W 369, p. 79.
	1913	W 362, p. 229; W 369, p. 79.
	1914	W 392, p. 176.
	1915	W 412, p. 232.
	1916	W 442, p. 180.
	1917	W 462, p. 159.
	1918	W 482, p. 148.
	1919-20	W 512, p. 225.

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.	
Tieton River at McAllister Meadows, near Naches (134).	1908	W 252, p. 175; W 369, p. 78.	
	1909	*W 272, p. 205; W 369, p. 78.	
	1910	*W 292, p. 204; W 369, p. 78.	
	1911	W 312, p. 238; W 369, p. 78.	
	1912	W 332, p. 251; W 369, p. 78.	
	1913	W 362, p. 228; W 369, p. 78.	
	1914	W 392, p. 175.	
	Tieton River, North Fork, below Clear Creek, near Naches (133).	1914	W 392, p. 173.
		1915	W 412, p. 231.
	Tieton River above and below Oak Creek, near Naches (136).	1901	†W 66, p. 134.
		1902	*W 85, p. 194; W 369, p. 81.
		1903	*W 100, p. 382; W 369, p. 81.
		1904	W 135, p. 103; W 369, p. 81.
		1905	*W 178, p. 89; W 369, p. 81.
		1906	*W 214, p. 62; W 369, p. 81.
1907		W 252, p. 180; W 369, p. 81.	
1909		W 272, p. 210; W 369, p. 81.	
1910		†W 292, p. 208; W 312, p. 245; W 369, p. 81.	
1911		W 312, p. 242; W 369, p. 81.	
1912		W 332, p. 256; W 369, p. 81.	
1913		W 362, p. 231; W 369, p. 81.	
Tokul Creek near Snoqualmie (40).....		1907-15	W 412, p. 78.
Toppenish Creek at Alfalfa (146).....		1909	W 272, p. 224.
		1910	W 292, p. 222.
	1911	W 312, p. 256.	
	1912	W 332, p. 266.	
Toppenish Creek near Fort Simcoe (144).....	1909	W 272, p. 224.	
	1910	W 292, p. 218.	
	1911	W 312, p. 252.	
	1912	†W 332, p. 264; W 362, p. 248.	
	1913	W 362, p. 248.	
	1914	W 392, p. 187.	
	1915	W 412, p. 245.	
	1916	W 442, p. 191.	
	1917	W 462, p. 170.	
	1918	W 482, p. 163.	
	1919-20	W 512, p. 242.	
	Toppenish Creek near White Swan (145).....	1909	W 272, p. 221.
		1910	W 292, p. 220.
		1911	W 312, p. 254.
	Toutle River near Castle Rock (205).....	1912	†W 332, p. 265.
1909		*W 253, p. 78; *W 272, p. 480; W 292, p. 586.	
1910		W 292, p. 586.	
	1911	W 312, p. 629.	
	1912	W 332, p. 704.	
1919-20	†W 514.		
Trout Creek at Guler (181).....	1909	*W 253, p. 51; *W 272, p. 425; W 332, p. 632.	
	1910	†W 292, p. 527; W 332, p. 632.	
	1911	†W 312, p. 532; W 332, p. 632.	
	1912	W 332, p. 632.	
Tucannon River near Pomeroy (154).....	1913	†W 362, p. 749.	
	1913-14	*W 393, p. 238; W 413, p. 195.	
Tucannon River near Starbuck (155).....	1915	W 413, p. 195.	
	1915	W 413, p. 198.	
	1916	W 443, p. 172.	
	1917	W 463, p. 153.	
	1909	W 272, p. 188.	
Wenas Creek near Selah (126).....	1910	†W 292, p. 187.	
	1911	†W 312, p. 218.	
	1912	†W 332, p. 233.	
Wenatchee Reclamation District canal at Dryden (96)	1911	W 362, p. 186.	
	1912	*W 332, p. 180; W 462, p. 131.	
	1913	W 362, p. 186.	
	1914	W 392, p. 139.	
	1915	W 412, p. 202.	
	1916	W 442, p. 156.	
	1917	W 462, p. 131.	
	1904	†W 135, p. 71; *W 178, p. 40; W 272, p. 140.	
	1905	*W 178, p. 40; W 272, p. 140.	
	1906	*W 214, p. 39; W 272, p. 140.	
1907-8	†W 252, p. 130; W 272, p. 140.		
1909	W 272, p. 140.		
1910	*W 292, p. 138; W 312, p. 155.		
1911	W 312, p. 155.		
1912	W 332, p. 178.		
1913	*W 362, p. 178; W 462, p. 127.		
1914	*W 392, p. 133; W 462, p. 127.		
1915	*W 412, p. 200; W 462, p. 127.		
1916	W 442, p. 154.		
1917	W 462, p. 127.		

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.	
Wenatchee River near Leavenworth (95).....	1910	†W 292, p. 138.	
	1911	*W 312, p. 154; W 482, p. 122.	
	1912	W 332, p. 176; W 482, p. 122.	
	1913	W 362, p. 177; W 482, p. 122.	
	1914	W 392, p. 177; W 482, p. 122.	
	1915	W 412, p. 198.	
	1916	W 442, p. 152.	
	1917	W 462, p. 125.	
	1918	W 482, p. 122.	
	1919-20	W 512, p. 191.	
Wenatchee River near Wenatchee (97).....	1897	19th A, pt. IV, p. 489; †W 16, p. 178.	
West Fork. See name of main stream.			
Whatcom Creek near Bellingham (59).....	1910-11	W 292, p. 636; W 312, p. 683.	
	1912	W 332, p. 50.	
	1913	†W 362, p. 46.	
	1914	†W 392, p. 42.	
White River at Buckley (20).....	1899	*21st A, pt. IV, p. 436; †W 38, p. 381 †W 39, p. 455; W 313, p. 85.	
	1900	†W 51, p. 445; W 313, p. 85.	
	1901	†W 66, p. 138; W 313, pp. 85, 87.	
	1902	†W 85, p. 217.	
	1903	†W 100, p. 462.	
	1910	†W 292, p. 610; W 313, p. 85.	
	1911	W 312, p. 648; W 313, p. 85.	
	1912	W 313, p. 85.	
	1913	W 363, p. 19.	
	1914	W 392, p. 20.	
	1915	W 412, p. 24.	
	1916	W 442, p. 26.	
	1917	W 462, p. 23.	
	1918	W 482, p. 20.	
	1919-20	W 512, p. 36.	
	White River near Chiwaukum (98).....	1911	†W 312, p. 158; *W 322, p. 182; W 48c, p. 28.
		1912	*W 332, p. 182; W 486, p. 28.
		1914	†W 392, p. 135; W 486, p. 28.
	White River flume at Buckley (20).....	1913	W 362, p. 21.
1914		W 392, p. 22.	
1915		W 412, p. 26.	
1916		W 442, p. 28.	
1917		W 462, p. 25.	
1918		W 482, p. 22.	
1919-20		W 512, p. 40.	
1918		W 484, p. 70.	
White Salmon River near Guler (177).....	1909	W 253, p. 50; †W 272, p. 424; W 312, p. 530.	
White Salmon River at Husum (179).....	1910	†W 292, p. 526; W 312, p. 530.	
	1911	W 312, p. 530.	
	1912	W 332, p. 630.	
	1913	W 362, p. 627.	
	1914	W 394, p. 96.	
	1915	W 414, p. 100.	
	1916	W 444, p. 104.	
	1917	W 464, p. 86.	
	1918	W 484, p. 71.	
1919-20	W 514, p.		
White Salmon River at splash dam, near Trout Lake (178).	1912	W 332, p. 629.	
	1913	†W 362, p. 625; W 394, p. 94.	
	1914	W 394, p. 94.	
	1915	W 414, p. 99.	
	1916	W 444, p. 102.	
	1917	W 464, p. 84.	
	1913	W 362, p. 629.	
	1915-16	*W 444, p. 105. Revised; see p. 330.	
	1917	*W 464, p. 87. Revised; see p. 330.	
	1918	*W 484, p. 72. Revised; see p. 330.	
1919	*W 514. Revised; see p. 331.		
Yakima River at Cle Elum (110).....	1906	W 214, p. 43; W 252, p. 140; W 369, p. 42.	
	1907-8	W 252, p. 140; W 369, p. 42.	
	1909	*W 272, p. 158; W 369, p. 42.	
	1910	W 292, p. 157; W 369, p. 42.	
	1911	*W 312, p. 176; W 369, p. 42.	
	1912	W 332, p. 201; W 369, p. 42.	
	1913	W 362, p. 195; W 369, p. 42.	
	1914	W 392, p. 146.	
	1915	W 412, p. 209.	
	1916	W 442, p. 161.	
	1917	W 462, p. 137.	
	1918	W 482, p. 130.	
1919-20	W 512, p. 197.		

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.	
Yakima River at Easton (109).....	1904	W 135, p. 76; W 369, p. 41.	
	1910	W 292, p. 154; W 369, p. 41.	
	1911	W 312, p. 174; W 369, p. 41.	
	1912	W 332, p. 199; W 369, p. 41.	
	1913	W 362, p. 193; W 369, p. 41.	
	1914	*W 392, p. 144; W 412, p. 207.	
	1915	W 412, p. 207.	
	Yakima River at Kiona (117).....	1895	†B 140, p. 248.
		1896	†W 11, p. 83; 18th A, pt. IV, p. 358; 19th A, pt. IV, p. 485.
		1897	†W 16, p. 176; 19th A, pt. IV, p. 481.
1898		†W 28, p. 165; 20th A, pt. IV, p. 499.	
1899		†W 38, p. 375; 21st A, pt. IV, p. 428.	
1900		†W 51, p. 442; 22d A, pt. IV, p. 488.	
1901		†W 66, p. 136; W 75, p. 203.	
1902		W 85, p. 186.	
1903		W 100, p. 373.	
1904		W 135, p. 87.	
1905	*W 178, p. 49; W 214, p. 50.		
1906	W 214, p. 49.		
1907-8	W 252, p. 152.		
1909	W 272, p. 166.		
1910	W 292, p. 166.		
1911	W 312, p. 198.		
1912	W 332, p. 218.		
1913	W 362, p. 204.		
1914	W 392, p. 156.		
1915	W 412, p. 217.		
Yakima River near Mabton (115).....	1911	W 312, p. 197.	
1912	W 332, p. 216.		
Yakima River near Martin (108).....	1903	†W 100, p. 386; W 369, p. 38.	
1904	W 135, p. 74; W 369, p. 38.		
1905	W 178, p. 43; W 369, p. 38.		
1906	W 214, p. 41; W 252, p. 139; W 369, p. 38.		
1907-8	W 252, p. 137; W 369, p. 38.		
1909	W 272, p. 155; W 369, p. 38.		
1910	W 292, p. 152; W 369, p. 38.		
1911	W 312, p. 172; W 369, p. 38.		
1912	W 332, p. 197; W 369, p. 38.		
1913	W 362, p. 190; W 369, p. 38.		
1914	W 392, p. 142.		
1915	W 412, p. 204.		
1916	W 442, p. 158.		
1917	W 462, p. 135.		
1918	W 482, p. 128.		
1919-20	W 512, p. 195.		
Yakima River near Parker (114).....	1908	W 252, p. 150.	
1909	W 272, p. 163.		
1910	W 292, p. 163.		
1911	W 312, p. 195.		
1912	W 332, p. 214.		
1913	W 362, p. 201.		
1914	W 392, p. 152.		
1915	W 412, p. 213.		
1916	W 442, p. 164.		
1917	W 462, p. 141.		
1918	W 482, p. 134.		
1919-20	W 512, p. 202.		
Yakima River near Prosser (116).....	1904	W 135, p. 85.	
1905	†W 178, p. 48.		
1906	W 214, p. 47.		
1913	W 362, p. 203.		
1914	W 392, p. 154.		
1915	W 412, p. 215.		
1916	W 442, p. 167.		
1917	W 462, p. 143.		
1918	W 482, p. 136.		
1919-20	W 512, p. 205.		
Yakima River near Richland (118).....	1906	W 214, p. 51.	
1907-8	†W 252, p. 155.		
1909	W 272, p. 168.		
1910	W 292, p. 168.		
1911	W 312, p. 200.		
Yakima River at Selah Gap, near North Yakima (112).	1897	†W 16, p. 173; 19th A, pt. IV, p. 478.	
1904	W 135, p. 79; W 369, p. 46.		
1911	W 312, p. 180; W 369, p. 46.		
1912	W 332, p. 205; W 369, p. 46.		
Yakima River at Umtanum (111).....	1906	†W 214, p. 44; W 252, p. 143; W 369, p. 44.	
1907-8	W 252, p. 143; W 369, p. 44.		
1909	W 272, p. 160; W 369, p. 44.		
1910	W 292, p. 159; W 369, p. 44.		

Bibliography of hydrometric data in the State of Washington—Continued.

Gaging station.	Year.	Publication.
Yakima River at Umtanum (111)—(Continued).....	1911	W 312, p. 178; W 369, p. 44.
	1912	W 332, p. 203; W 369, p. 44.
	1913	W 362, p. 196; W 369, p. 44.
	1914	*W 392, p. 148; W 412, p. 211.
	1915	W 412, p. 211.
	1916	W 442, p. 163.
	1917	W 462, p. 139.
	1918	W 482, p. 132.
	1919-20	W 512, p. 200.
	Yakima River at Union Gap, near Yakima (113).....	1893-1895	†B 140, p. 245.
1896		†W 11, p. 85; *18th A, pt. IV, p. 356; 19th A, pt. IV, p. 480; W 369, p. 47.
1897		†W 16, p. 175; 19th A, pt. IV, p. 479; W 369, p. 47.
1898		†W 28, pp. 165, 169, 170; 20th A, pt. IV, p. 500; W 369, p. 47.
1899		†W 38, p. 373; *21st A, pt. IV, p. 427; W 369, p. 47.
1900		†W 51, p. 441; *22d A, pt. IV, p. 447; W 369, p. 47.
1901		†W 66, p. 135; *W 75, p. 202; W 369, p. 47.
1902		W 85, p. 188; W 369, p. 47.
1903		W 100, p. 376; W 369, p. 47.
1904		*W 135, p. 81; W 369, p. 47.
1905		†W 178, p. 46; W 214, p. 45; W 369, p. 47.
1906		W 214, p. 45; W 369, p. 47.
1907-8		W 252, p. 146; W 369, p. 47.
1909		†W 272, p. 162; W 292, p. 163; W 369, p. 47.
1910		W 292, p. 162; W 369, p. 47.
1911		W 312, p. 182; W 369, p. 47.
1912		W 332, p. 206; W 369, p. 47.
1913		W 362, p. 199; W 369, p. 47.
1914		W 392, p. 150.
1915		W 412, p. 215.
1916	W 442, p. 167.	
1917	W 462. ^a	
1918	W 482. ^a	
1919-20	W 512. ^a	

^a To obtain records add discharge of Yakima River near Parker, Sunnyside, Old Reservation, and New Reservation canals.

GAGING-STATION RECORDS.**DRAINAGE BASINS BETWEEN COLUMBIA RIVER AND PUGET SOUND.****QUINAULT RIVER BASIN.****QUINAULT RIVER AT QUINAULT LAKE (1).²**

At Quinault Lake, 33 miles north of Hoquiam, in Grays Harbor County. Staff gages at two different points on the lake prior to October 1, 1916; water-stage recorder (Pl. I, A) at the outlet thereafter.

Flow partly regulated by natural storage in lake.

Drainage area, 264 square miles (revised); measured on Plate I, Professional Paper 7.

² Numbers in parentheses refer to corresponding numbers on Plate IX showing location of gaging stations.

Monthly discharge of Quinault River at Quinault Lake.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911-12.							
October.....			900	3.41	3.93	55,300	D.
November.....	18,200	680	4,640	17.6	19.64	276,000	A.
December.....	4,890	1,870	2,770	10.5	12.11	170,000	A.
January.....	13,400	1,240	4,710	17.8	20.52	290,000	A.
February.....	8,240	1,670	4,440	16.8	18.12	255,000	A.
March.....	1,580	1,010	1,160	4.39	5.06	71,300	A.
April.....	2,080	814	1,180	4.47	4.99	70,200	A.
May.....	2,430	1,490	1,940	7.35	8.47	119,000	A.
June.....	2,430	1,580	2,010	7.61	8.49	120,000	A.
July.....	1,670	940	1,230	4.66	5.37	75,600	A.
August.....	1,580	752	1,020	3.86	4.45	62,700	A.
September.....	2,190	668	1,220	4.62	5.16	72,600	A.
The year.....	18,200		2,260	8.56	116.31	1,640,000	
1912-13.							
October.....	4,730	704	1,870	7.08	8.16	115,000	A.
November.....	12,000	1,970	5,660	21.4	23.88	337,000	B.
December.....	6,040	2,080	3,600	13.6	15.68	221,000	A.
January.....	6,380	1,400	2,990	11.3	13.03	184,000	A.
February.....	8,040	1,240	2,580	9.77	10.17	143,000	A.
March.....	3,300	1,320	1,810	6.86	7.91	111,000	A.
April.....	2,670	1,670	2,060	7.80	8.70	123,000	A.
May.....	4,430	1,490	3,040	11.5	13.26	187,000	A.
June.....	5,370	2,910	3,790	14.4	16.07	226,000	A.
July.....	5,050	2,080	3,210	12.2	14.07	197,000	A.
August.....	2,190	940	1,430	5.42	6.25	87,900	A.
September.....	7,460	870	2,050	7.77	8.67	122,000	A.
The year.....	12,000	704	2,840	10.8	145.85	2,050,000	
1913-14.							
October.....	11,600	814	2,680	10.2	11.76	165,000	A.
November.....	17,900	1,160	5,830	22.1	24.66	347,000	A.
December.....	7,100	1,970	2,950	11.2	12.91	181,000	A.
January.....	30,700	2,670	7,150	27.1	31.24	440,000	B.
February.....	4,580	1,580	2,470	9.36	9.75	137,000	A.
March.....	5,530	2,190	3,190	12.1	13.95	196,000	A.
April.....	5,870	2,080	3,470	13.1	14.62	206,000	A.
May.....	3,300	2,080	2,720	10.3	11.87	167,000	A.
June.....	3,300	2,080	2,790	10.6	11.83	166,000	A.
July.....	2,790	1,010	1,900	7.20	8.30	117,000	A.
August.....	1,080	626	856	3.24	3.74	52,600	A.
September.....	7,100	538	1,570	5.95	6.64	93,400	A.
The year.....	30,700	538	3,130	11.9	161.27	2,270,000	
1914-15.							
October.....	15,500	1,060	4,050	15.3	17.64	249,000	A.
November.....	11,200	2,910	5,170	19.6	21.87	308,000	A.
December.....	4,280	980	1,850	7.01	8.08	114,000	A.
January.....	4,730	1,180	2,620	9.92	11.44	161,000	A.
February.....	3,570	1,670	2,280	8.64	9.00	127,000	A.
March.....	7,280	1,490	2,900	11.0	12.68	178,000	A.
April.....	14,300	1,670	4,140	15.7	17.52	246,000	A.
May.....	5,370	1,490	2,630	9.96	11.48	162,000	A.
June.....	2,910	1,180	1,770	6.70	7.48	105,000	A.
July.....	1,310	805	1,020	3.86	4.45	62,700	A.
August.....	770	530	610	2.31	2.66	37,500	A.
September.....	600	400	490	1.86	2.08	29,200	B.
The year.....	15,500	400	2,460	9.32	126.38	1,780,000	
1915-16.							
October.....	11,200	410	2,550	9.66	11.14	157,000	B.
November.....	8,640	1,600	3,270	12.4	13.83	195,000	B.
December.....	17,700	2,160	5,990	22.7	26.17	368,000	B.
January.....	6,560	1,120	2,180	8.26	9.52	134,000	B.
February.....	10,500	1,500	4,800	18.2	19.63	276,000	B.
March.....	9,260	2,040	4,760	18.0	20.75	293,000	B.
April.....	3,030	2,280	2,660	10.1	11.27	158,000	B.
May.....	4,280	2,040	2,990	11.3	13.03	184,000	B.
June.....	6,040	2,280	3,670	13.9	15.51	218,000	B.
July.....	4,130	2,520	3,320	12.6	14.53	204,000	B.
August.....	2,400	1,210	1,730	6.55	7.55	106,000	B.
September.....	1,210	632	835	3.16	3.53	49,700	A.
The year.....	17,700	410	3,230	12.2	166.46	2,340,000	

Monthly discharge of Quinault River at Quinault Lake—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1916-17.							
October.....	3,060	446	624	2.36	2.72	38,400	A.
November.....	6,550	1,170	2,780	10.5	11.71	165,000	A.
December.....	4,720	1,160	2,220	8.41	9.70	136,000	A.
January.....	4,890	1,140	2,130	8.07	9.30	131,000	A.
February.....	3,500	1,210	2,290	8.67	9.03	127,000	A.
March.....	2,780	954	1,570	5.95	6.86	96,500	A.
April.....	3,660	.....	1,760	6.67	7.44	105,000	B.
May.....	4,380	2,180	2,940	11.1	12.80	181,000	A.
June.....	4,550	2,920	3,790	14.4	16.07	226,000	A.
July.....	4,050	1,990	2,210	8.37	9.65	136,000	A.
August.....	1,990	912	1,440	5.45	6.28	88,500	A.
September.....	1,360	745	693	2.62	2.92	41,200	A.
The year.....	6,550	446	2,030	7.69	104.48	1,470,000	
1917-18.							
October.....	2,240	590	975	3.69	4.25	60,000	A.
November.....	4,380	558	2,040	7.73	8.62	121,000	A.
December.....	27,800	2,120	9,720	36.8	42.43	598,000	A.
January.....	21,000	2,500	6,160	23.3	26.86	379,000	A.
February.....	10,800	1,640	4,210	15.9	16.56	234,000	A.
March.....	10,800	.....	3,660	13.9	16.03	225,000	B.
April.....	3,730	1,930	2,580	9.77	10.90	154,000	A.
May.....	2,920	.....	1,870	7.08	8.16	115,000	B.
June.....	3,060	1,260	1,860	7.05	7.87	111,000	A.
July.....	1,220	641	888	3.36	3.87	54,600	A.
August.....	1,130	590	789	2.99	3.45	48,500	A.
September.....	636	428	502	1.90	2.12	29,900	A.
The year.....	27,800	428	2,940	11.1	151.12	2,130,000	
1918-19.							
October.....	12,900	425	2,480	9.39	10.83	152,000	A.
November.....	7,150	1,750	3,620	13.7	15.29	215,000	A.
December.....	21,400	1,810	6,280	23.8	27.44	386,000	A.
January.....	.....	1,340	5,270	20.0	23.06	324,000	C.
February.....	9,360	1,990	3,610	13.7	14.27	200,000	A.
March.....	5,250	1,690	2,770	10.5	12.11	170,000	A.
April.....	6,750	2,380	3,680	13.9	15.51	219,000	A.
May.....	7,360	2,180	3,360	12.7	14.64	207,000	A.
June.....	4,890	2,440	3,000	11.4	12.72	179,000	A.
July.....	3,200	1,870	2,620	9.92	11.44	161,000	A.
August.....	1,750	780	1,170	4.43	5.11	71,900	A.
September.....	766	495	648	2.45	2.73	38,600	A.
The year.....	21,400	425	3,210	12.2	165.15	2,320,000	

NOTE.—Maximum discharge during period of record, 32,500 second-feet Jan. 6, 1914; minimum discharge, 395 second-feet at 7 a. m. Oct. 1, 1915. Mean discharge for October, 1911, estimated by comparison with record of Snoqualmie River near Snoqualmie; mean discharge determinations used for October from 1911 to 1918.

Yearly discharge of Quinault River at Quinault Lake.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
			Mean.					Month.
1912.....	18,200	.....	900	Oct.....	2,260	8.56	116.31	1,640,000
1913.....	12,000	704	1,430	Aug.....	2,840	10.8	145.85	2,050,000
1914.....	30,700	538	856	Aug.....	3,130	11.9	161.27	2,270,000
1915.....	15,500	410	400	Sept.....	2,460	9.32	128.38	1,780,000
1916.....	17,700	400	490	Sept.....	3,230	12.2	166.46	2,340,000
1917.....	6,550	446	624	Oct.....	2,030	7.69	104.48	1,470,000
1918.....	27,800	428	502	Sept.....	2,940	11.1	151.12	2,130,000
1919.....	21,400	425	648	Sept.....	3,210	12.2	165.15	2,320,000
The period.	30,700	400	490	Sept., 1915	2,760	10.5	142.13	2,000,000

SOLEDUCK RIVER BASIN.

SOLEDUCK RIVER NEAR FAIRHOLM (2).

Water-stage recorder 300 feet below the South Fork and 7 miles southwest of Fairholm, in Clallam County.

Drainage area, 79 square miles; measured on Plate I, Professional Paper 7.

Monthly discharge of Soleduck River near Fairholm.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....		92	143	1.81	2.09	8,790	B.
November.....	605	101	252	3.19	3.56	15,000	B.
December.....	11,500	295	2,780	35.2	40.58	171,000	B.
January.....	4,730	580	1,430	18.1	20.87	87,900	B.
February.....	4,410	352	1,100	13.9	14.47	61,100	A.
March.....	3,730	210	869	11.0	12.68	53,400	A.
April.....	1,630	438	636	8.05	8.98	37,800	A.
May.....	842	279	457	5.78	6.66	28,100	A.
June.....	1,070	231	408	5.16	5.76	24,300	A.
July.....	231	111	165	2.09	2.41	10,100	A.
August.....	207	91	125	1.58	1.82	7,690	A.
September.....		59	71.3	.903	1.01	4,240	B.
The year.....	11,500	59	703	8.90	120.89	509,000	.....
1918-19.							
October.....	6,100	58	499	6.32	7.29	30,700	A.
November.....	3,850	379	838	10.6	11.83	49,900	A.
December.....	8,910	508	1,760	22.3	25.71	108,000	A.
January.....	5,050	353	1,380	17.5	20.18	84,800	A.
February.....	4,040	445	890	11.3	11.77	49,400	A.
March.....	1,080	365	564	7.14	8.23	34,700	A.
April.....			893	11.3	12.61	53,100	B.
May.....	1,470	498	751	9.51	10.96	46,200	A.
June.....	1,040	553	663	8.39	9.36	39,500	A.
July.....	742	361	560	7.09	8.17	34,400	A.
August.....	334	147	244	3.09	3.56	15,000	A.
September.....	210	90	123	1.56	1.74	7,320	A.
The year.....	8,910	58	764	9.67	131.41	553,000	.....

NOTE.—Maximum discharge during period of record, 18,600 second-feet at 6 a. m. Dec. 18, 1917; minimum discharge, 58 second-feet at 8 a. m. Sept. 29 and Oct. 2 and 3, 1918.

SOLEDUCK RIVER NEAR QUILLAYUTE (3).

Wire gage at county highway bridge 9 miles northeast of Lapush, near Quillayute in Clallam County.

Drainage area, 272 square miles.

Monthly discharge of Soleduck River near Quillayute.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1897-98.							
November 14-30.....	9,770	1,220	2,730	10.0	6.51	92,000	B.
December.....	12,300	1,460	3,800	14.0	16.14	234,000	C.
January.....	2,590	1,220	1,720	6.32	7.29	106,000	B.
February.....	5,400	1,100	2,830	10.4	10.83	157,000	B.
March.....	2,120	865	1,240	4.56	5.26	76,200	B.
April.....	1,940	865	1,190	4.37	4.88	70,700	B.
May.....	1,280	865	1,040	3.83	4.42	64,100	B.
June.....	1,840	783	1,000	3.69	4.12	59,800	B.
July.....	975	475	676	2.49	2.87	41,600	B.
August.....	475	289	366	1.35	1.56	22,500	B.
September.....	1,300	200	468	1.72	1.92	27,800	B.
The period.....						952,000	
1898-99.							
October.....	5,140	525	1,170	4.31	4.97	72,000	B.
November.....	3,160	1,060	1,800	6.62	7.39	107,000	B.
December.....	4,980	1,060	2,070	7.59	8.75	127,000	B.
January.....	5,960	870	2,110	7.75	8.94	130,000	B.
February.....	5,560	990	1,840	6.78	7.06	102,000	B.
March.....	2,160	682	1,170	4.30	4.96	71,900	B.
April.....	4,060	682	1,190	4.38	4.89	70,900	B.
May.....	1,720	870	1,040	3.82	4.40	63,900	B.
June.....	1,110	735	939	3.45	3.85	55,900	B.
July.....	950	612	723	2.66	3.07	44,500	B.
August.....	612	335	466	1.71	1.97	28,700	B.
September.....	335	240	283	1.04	1.16	16,800	C.
The year.....	5,960	240	1,230	4.55	61.41	891,000	
1899-1900.							
October.....	1,690	272	607	2.23	2.57	37,300	B.
November.....	8,960	665	2,860	10.5	11.72	170,000	C.
December.....	7,460	1,270	2,890	10.6	12.22	178,000	C.
January.....	5,560	1,180	2,600	9.55	11.01	160,000	B.
February.....	2,860	1,090	1,400	5.14	5.35	77,600	B.
March.....	12,600	1,040	2,660	9.79	11.29	164,000	B.
The period.....						787,000	
1900-1901.							
December 22-31.....			4,420	16.2	6.02	87,600	C.
January.....	11,400	1,180	3,090	11.4	13.14	190,000	C.
February.....	8,120	730	2,070	7.61	7.92	115,000	B.
March.....	8,660	1,060	2,120	7.78	8.97	130,000	B.
April.....	4,080	1,260	2,150	7.89	8.80	126,000	B.
May.....	4,750	986	1,810	6.65	7.67	111,000	B.
June.....	2,180	861	1,260	4.64	5.27	75,100	B.
July.....	833	530	671	2.47	2.85	41,300	B.
August.....	506	276	374	1.38	1.59	23,000	B.
September.....	276	201	236	.87	.97	14,000	C.
The period.....						913,000	
1901.							
October.....	3,540	155	368	1.35	1.56	22,500	B.
November.....	12,700	1,920	4,290	15.8	17.63	255,000	C.
December.....	8,800	1,180	3,590	13.2	15.22	221,000	C.
The period.....						498,000	

CALAWAH RIVER NEAR FORKS (4).³

Wire gage at county highway bridge near Forks, in Clallam County.
Drainage area, 213 square miles.

Monthly discharge of Calawah River near Forks.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1897-98.							
November 12-30.....	19,000	797	2,430	11.4	12.27	86,700	C.
December.....	10,200	873	3,690	17.3	19.95	227,000	C.
January.....	3,400	689	1,230	5.77	6.65	75,400	B.
February.....	8,980	797	2,940	13.8	14.37	163,000	C.
March.....	1,630	474	765	3.59	4.14	47,000	B.
April.....	3,050	301	824	3.87	4.32	49,000	B.
May.....	621	270	449	2.11	2.43	27,600	B.
June.....	1,440	270	524	2.46	2.74	31,200	B.
July.....	892	155	323	1.52	1.75	19,900	B.
August 1-13, 26-31.....	706	105	239	1.12	1.29	14,700	C.
September.....	1,250	40	329	1.54	1.72	19,600	C.
The period.....						761,000	
1898-99.							
October.....	3,810	379	807	3.79	4.37	49,600	B.
November.....	3,810	604	1,460	6.87	7.66	87,100	B.
December.....	8,430	604	2,180	10.2	11.76	134,000	C.
January.....	10,600	740	3,020	14.2	16.37	186,000	C.
February.....	6,260	621	2,190	10.3	10.73	121,000	C.
March.....	3,540	554	1,240	5.81	6.70	76,100	B.
April.....	6,260	426	1,230	5.79	6.46	73,400	B.
May.....	1,150	689	823	3.86	4.45	50,600	B.
June.....	689	301	483	2.27	2.53	28,700	B.
July.....	286	80	194	.91	1.05	11,900	B.
August.....	180	70	116	.55	.63	7,130	C.
September.....	193	20	67	.31	.35	3,990	C.
The year.....	10,600	20	1,150	5.38	73.06	830,000	
1899-1900.							
October.....	2,070	80	576	2.70	3.11	35,400	B.
November.....	11,400	474	3,770	17.7	19.75	224,000	C.
December.....	15,800	835	2,930	13.8	15.91	180,000	C.
January.....	8,000	850	2,940	13.8	15.91	181,000	C.
February.....	4,950	777	1,740	8.16	8.49	96,500	B.
March.....	12,600	665	2,400	11.3	13.03	148,000	C.
April.....	2,480	237	762	3.58	4.00	45,300	B.
May.....	2,070	225	685	3.22	3.71	42,100	B.
June.....	6,600	330	1,130	5.30	5.91	67,100	B.
July.....	687	190	460	2.16	2.49	28,300	B.
August.....	507	110	169	.79	.91	10,400	C.
September.....	347	60	130	.61	.68	7,740	C.
The year.....	15,800	60	1,470	6.91	93.90	1,070,000	
1900-1901.							
October.....	7,800	60	1,800	8.47	9.76	111,000	B.
November.....	11,600	777	2,310	10.8	12.05	137,000	C.
December.....	8,100	1,160	3,110	14.6	16.83	191,000	C.
January.....	11,700	314	1,720	8.09	9.33	106,000	B.
February.....	5,210	300	1,150	5.40	5.62	65,000	B.
March.....	5,210	620	1,370	6.44	7.42	84,400	B.
April.....	2,440	566	997	4.63	5.22	59,300	B.
May.....	5,020	314	949	4.46	5.14	58,400	B.
June.....	909	314	478	2.24	2.50	28,400	B.
July.....	300	147	180	.84	.97	11,100	C.
August.....	158	0	48	.23	.27	2,950	C.
September.....	170	0	41	.19	.21	2,440	C.
The year.....	11,700	0	1,180	5.56	75.32	857,000	
1901							
October.....	2,700	0	199	.93	1.07	12,200	B.
November.....	8,710	762	2,450	11.5	12.83	146,000	C.
December.....	6,540	566	2,090	9.79	11.29	128,000	C.
The period.....						286,000	

³ Previously published as Kalawa River near Forks.

LYRE RIVER BASIN.

LYRE RIVER AT PIEDMONT (5).

Water-stage recorder a quarter of a mile below outlet of Crescent Lake and half a mile west of Piedmont, in Clallam County.

Flow partly regulated by natural storage in the lake.

Drainage area, 49.5 square miles: measured on topographic maps.

Monthly discharge of Lyre River at Piedmont.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....		51	65.6	1.33	1.53	4,030	C.
November.....	82	50	71.4	1.44	1.61	4,250	B.
December.....	960	86	388	7.84	9.04	23,900	B.
January.....	1,020	348	642	13.0	14.99	39,500	B.
February.....	687	335	457	9.23	9.61	25,400	B.
March.....	535	258	350	7.07	8.15	21,500	B.
April.....	414	250	316	6.38	7.12	18,800	B.
May.....	255	169	217	4.38	5.05	13,300	A.
June.....	169	104	143	2.89	3.22	8,510	A.
July.....	102	60	81.3	1.64	1.89	5,000	A.
August.....	77	49	61.2	1.24	1.43	3,760	A.
September.....	56	32	42.1	.851	.95	2,510	A.
The year.....	1,020	32	235	4.75	64.59	170,000	
1918-19.							
October.....	208	59	144	2.91	3.36	8,850	A.
November.....	314	197	255	5.15	5.75	15,200	A.
December.....	692	243	506	10.2	11.76	31,100	A.
January.....		281	435	8.79	10.13	26,700	A.
February.....	598	426	518	10.5	10.93	28,800	A.
March.....	426	300	367	7.41	8.54	22,600	A.
April.....	349	288	314	6.34	7.07	18,700	A.
May.....	321	255	279	5.64	6.50	17,200	A.
June.....	262	214	234	4.73	5.28	13,900	A.
July.....	214	140	180	3.64	4.20	11,100	A.
August.....	135	67	98.2	1.98	2.28	6,040	A.
September.....	65	40	55.6	1.12	1.25	3,310	A.
The year.....	692	40	281	5.68	77.05	204,000	

NOTE.—Maximum discharge during period of record, 1,080 second-feet at noon Jan. 4, 1918; minimum discharge, 32 second-feet Sept. 29-30, 1918

ELWHA RIVER BASIN.

ELWHA RIVER AT McDONALD BRIDGE, NEAR PORT ANGELES (6).

At McDonald Bridge, 6½ miles above mouth and 8 miles southwest of Port Angeles, in Clallam County. Wire gage used 1897 to 1901; water-stage recorder installed in October, 1918.

Drainage area, 262 square miles; measured on Plate I, Professional Paper 7.

Monthly discharge of Eluwa River at McDonald Bridge, near Port Angeles.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1897-98.							
October ^a	1,710	170	486	1.85	2.13	29,900	C.
November.....	7,080	310	1,510	5.76	6.43	90,000	B.
December.....	4,810	520	2,290	8.74	10.08	141,000	B.
January.....	3,090	855	1,570	5.99	6.91	96,500	B.
February.....	3,260	967	2,160	8.24	8.58	120,000	B.
March.....	1,860	687	1,250	4.77	5.50	76,800	B.
April.....	2,150	687	1,230	4.69	5.23	73,000	B.
May.....	2,540	1,240	2,010	7.67	8.84	123,000	B.
June.....	3,280	1,640	2,230	8.51	9.50	133,000	C.
July.....	2,380	1,430	1,810	6.91	7.97	111,000	C.
August.....	1,600	631	1,200	4.58	5.28	73,800	B.
September.....	2,110	470	695	2.65	2.96	41,400	B.
The year.....	7,080	170	1,530	5.84	79.41	1,110,000	
1898-99.							
October.....	2,920	330	889	3.39	3.91	54,700	B.
November.....	1,560	687	1,070	4.08	4.55	63,700	B.
December.....	3,310	520	1,220	4.66	5.37	74,900	B.
January.....	3,320	660	1,510	5.76	6.64	93,000	B.
February.....	3,320	770	1,370	5.23	5.45	76,100	B.
March.....	1,210	510	684	2.61	3.01	42,100	B.
April.....	1,920	520	763	2.91	3.25	45,400	B.
May.....	2,020	575	1,250	4.77	5.50	76,800	
June.....	2,820	1,630	2,120	8.09	9.03	126,000	C.
July.....	2,470	1,630	2,040	7.79	8.98	125,000	C.
August.....	1,630	575	999	3.81	4.39	61,400	B.
September.....	805	510	570	2.18	2.43	33,900	B.
The year.....	3,320	330	1,210	4.62	62.51	873,000	
1899-1900.							
October.....	1,680	475	742	2.83	3.26	45,600	B.
November.....	8,320	595	3,340	12.7	14.17	199,000	B.
December.....	6,870	1,000	2,500	9.54	11.00	154,000	B.
January.....	6,940	1,020	2,520	9.62	11.09	155,000	B.
February.....	1,570	690	920	3.51	3.79	52,900	B.
March.....	14,200	710	2,850	10.9	12.57	175,000	C.
April.....	6,940	930	1,740	6.64	7.41	104,000	B.
May.....	2,950	1,100	1,920	7.33	8.45	118,000	B.
June.....	8,740	1,260	2,790	10.6	11.83	166,000	C.
July.....	1,890	810	1,250	4.77	5.50	77,000	B.
August.....	1,310	650	941	3.59	4.14	57,900	B.
September.....	1,140	562	672	2.56	2.86	40,000	B.
The year.....	14,200	475	1,850	7.06	96.07	1,340,000	
1900-1901.							
October.....	5,320	495	1,330	5.08	5.86	81,600	B.
November.....	4,910	930	1,650	6.30	7.03	98,100	B.
December.....	12,200	1,570	4,170	15.9	18.33	256,000	C.
January.....	11,400	985	1,940	7.40	8.53	119,000	C.
February.....	11,200	645	1,810	6.91	7.20	100,000	C.
March.....	7,000	685	1,560	5.95	6.86	96,000	B.
April.....	1,300	625	957	3.65	4.07	56,900	B.
May.....	8,050	1,070	2,440	9.31	10.73	150,000	C.
June.....	5,950	1,230	2,380	9.08	10.13	142,000	C.
July.....	2,100	1,340	1,640	6.26	7.22	101,000	B.
August.....	1,420	873	1,170	4.47	5.15	72,100	B.
September.....	929	605	690	2.63	2.93	41,100	B.
The year.....	12,200	495	1,820	6.95	94.04	1,310,000	
1901.							
October.....	1,900	460	664	2.53	2.92	40,800	C.
November.....	23,800	795	4,040	15.4	17.18	240,000	C.
December.....	7,470	1,070	2,310	8.82	10.17	142,000	C.
The period.....						423,000	

^a Discharge Oct. 1-7 estimated by comparison with discharge of Cedar River near Ravensdale.

Monthly discharge of Elwha River at McDonald Bridge, near Port Angeles—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1918-19.							
October.....			1,300	4.96	5.72	79,900	D.
November.....			1,600	6.11	6.82	95,200	D.
December.....	11,000		3,470	13.2	15.22	213,000	B.
January.....	6,070	548	2,080	7.94	9.15	128,000	A.
February.....	5,430	1,040	1,840	7.02	7.31	102,000	A.
March.....	1,480	784	990	3.78	4.36	60,900	A.
April.....	2,880	1,050	1,750	6.68	7.45	104,000	A.
May.....	3,550	1,470	2,100	8.02	9.25	129,000	A.
June.....	2,820		2,310	8.82	9.84	137,000	B.
July.....			2,300	8.78	10.12	141,000	B.
August.....		935	1,300	4.96	5.72	79,000	B.
September.....	871	440	657	2.51	2.80	39,100	B.
The year.....	11,000	440	1,810	6.91	93.76	1,310,000	

NOTE.—Maximum discharge during period of record, 23,800 second-feet Nov. 27, 1901; minimum discharge, 170 second-feet Oct. 18, 1897.

Yearly discharge of Elwha River at McDonald Bridge, near Port Angeles.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maxi- mum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
			Mean.					Month.
1898.....	7,080	170	486	Oct.....	1,530	5.84	79.41	1,110,000
1899.....	3,320	330	570	Sept.....	1,210	4.62	62.51	873,000
1900.....	14,200	475	672	Sept.....	1,850	7.06	96.07	1,340,000
1901.....	12,200	495	690	Sept.....	1,820	6.95	94.04	1,310,000
1919.....	11,000	440	657	Sept.....	1,810	6.91	93.76	1,310,000
The period .	14,200	170	486	Oct., 1897..	1,640	6.28	85.16	1,190,000

ELWHA RIVER NEAR PORT ANGELES (7).

Chain gage at power plant in Elwha Canyon, 2 $\frac{3}{4}$ miles below McDonald Bridge and 7 miles southwest of Port Angeles, in Clallam County.

Drainage area, 308 square miles.

Monthly discharge of Elwha River near Port Angeles.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
April 16-30.....	1,920	667	1,100	32,700	A.
May 15-31.....	3,850	2,000	2,380	80,300	A.
June.....	5,230	2,280	3,210	191,000	A.
July.....	3,550	1,620	2,620	161,000	A.
August.....	1,680	455	1,020	62,700	A.
September.....	2,140	488	818	48,700	A.

DUNGENESS RIVER BASIN.

DUNGENESS RIVER NEAR SEQUIM (8).

Wire gage at county highway bridge near Sequim, 9 miles above Dungeness and mouth of river, in Clallam County.

Monthly discharge of Dungeness River near Sequim.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1897.					
July 5-31.....	669	323	474	29,100	B.
August.....	438	218	321	19,700	B.
September.....	234	167	181	10,800	B.
The period.....				59,600	
1897-98.					
October.....	553	138	182	11,200	B.
November.....	2,950	157	636	37,800	B.
December.....	2,880	85	702	43,200	B.
January.....	273	234	248	15,200	B.
February.....	652	234	342	19,000	B.
March.....	288	227	248	15,200	B.
April.....	406	234	264	15,700	B.
May.....	757	299	443	27,200	B.
June.....	1,180	310	550	32,700	B.
July.....	546	310	378	23,200	B.
The period.....				240,000	

NOTE.—Record discontinued July 28, 1898. Discharge July 29-31 estimated from record of Dungeness River at Dungeness.

DUNGENESS RIVER AT DUNGENESS (9).

Wire gage at highway bridge at Dungeness, 1 mile above mouth of river, in Clallam County.

Monthly discharge of Dungeness River at Dungeness.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1898.					
July 29-31.....	418	382	394	2,340	B.
August.....	365	170	239	14,700	B.
September.....	383	156	170	10,100	B.
1898-99.					
October.....	610	152	185	11,400	B.
November.....	159	153	155	9,220	B.
December.....	785	150	208	12,800	B.
January.....	1,180	203	478	29,400	B.
February.....	640	255	375	20,800	B.
March.....	310	203	240	14,800	B.
April.....	505	205	261	15,500	B.
May.....	850	215	463	28,500	B.
June.....	1,090	612	810	48,200	C.
July.....	880	480	682	41,900	B.
August.....	531	185	299	18,400	B.
September.....	255	207	229	13,600	B.
The year.....	1,180	150	365	265,000	

Monthly discharge of Dungeness River at Dungeness—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1899-1900.					
October.....	760	197	278	17,100	B.
November.....	3,460	382	1,340	79,700	C.
December.....	2,920	310	941	57,900	B.
January.....	1,140	392	667	41,000	B.
February.....	392	280	306	17,000	B.
March.....	3,780	235	866	53,200	C.
April.....	1,340	392	667	39,700	B.
May.....	1,020	430	678	41,700	B.
June.....	1,910	568	918	54,600	C.
July.....	808	520	611	37,600	B.
August.....	544	268	359	22,100	B.
September.....	280	218	244	14,500	C.
The year.....	3,780	197	656	476,000	
1900.					
October.....	568	213	311	19,100	B.
November.....	496	235	281	16,700	B.
December.....	3,930	373	1,190	73,400	B.
The period.....				109,000	

PUGET SOUND DRAINAGE BASINS.

DOSEWALLIPS RIVER BASIN.

DOSEWALLIPS RIVER AT BRINNON (10).

Staff gage at highway bridge at Brinnon, in Jefferson County.

Monthly discharge of Dosewallips River at Brinnon.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1910-11.					
November.....	4,920	191	802	47,700	D.
December.....		344	779	47,900	C.
January.....	462	202	286	17,600	B.
February.....	386	128	203	11,300	A.
March.....	590	128	333	20,500	A.
April.....	590	280	396	23,600	A.
May.....	2,160	516	897	55,200	A.
June.....	1,440	671	946	56,300	A.
July.....	960	590	771	47,400	A.
August.....	586	270	394	24,200	B.
September.....	420	144	243	14,500	B.
October.....	360	116	192	11,800	B.
The year.....	4,920	116	522	378,000	

DUCKABUSH RIVER BASIN.

DUCKABUSH RIVER NEAR DUCKABUSH (11).

Staff gage three-fourths mile above Duckabush ranger station and 6 miles above Duckabush, in Jefferson County.

Monthly discharge of Duckabush River near Duckabush.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1911.					
January.....	274	194	216	13,300	B.
February.....	140	103	113	6,280	B.
March.....	550	100	322	19,800	C.
April.....			337	20,100	D.
May.....	2,840		851	52,300	D.
June.....	1,290	420	833	49,600	C.
July.....	760	290	470	28,900	C.
August.....	280	135	177	10,900	C.
September.....			177	10,500	D.
October.....			149	9,160	D.
November.....	3,530		556	33,100	C.
December.....	1,880	169	519	31,900	B.
The year.....			395	286,000	

NOTE.—Mean discharge Dec. 4-31, 1910, was 912 second-feet; total run-off for same period was 50,700 acre-feet.

SKOKOMISH RIVER BASIN.

NORTH FORK OF SKOKOMISH RIVER NEAR HOODSPORT (12).

Water-stage recorder at footbridge on Forest Service trail to South Fork, 4 miles below Lake Cushman and 4 miles northwest of Hoodsport, in Mason County.

Drainage area, 91 square miles; measured on Plate I, Professional Paper 7, and township plats.

Monthly discharge of North Fork of Skokomish River near Hoodsport.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1913.							
February.....	1,790	379	666	7.32	7.62	37,000	A.
March.....	890	406	546	6.00	6.92	33,600	A.
April.....	1,020	491	704	7.74	8.64	41,900	A.
May.....	1,590	521	1,000	11.0	12.68	61,500	A.
June.....	1,790	890	1,200	13.2	14.73	71,400	A.
July.....	1,400	582	885	9.73	11.22	54,400	A.
August.....	614	244	383	4.21	4.85	23,600	A.
September.....	3,190	235	561	6.16	6.87	33,400	B.
The period.....						357,000	
1913-14.							
October.....	2,370	217	511	5.62	6.48	31,400	B.
November.....	6,840	290	1,620	17.8	19.86	96,400	B.
December.....	1,790	582	925	10.2	11.76	56,900	B.
January.....	12,000	872	2,410	26.5	30.55	148,000	B.
February.....	1,180	462	727	7.99	8.32	40,400	A.
March.....	2,250	696	1,010	11.1	12.80	62,100	A.
April.....	2,490	646	1,190	13.1	14.62	70,800	A.
May.....	1,180	747	973	10.7	12.34	59,800	A.
June.....	1,140	598	809	8.89	9.92	48,100	A.
July.....	818	285	506	5.56	6.41	31,100	A.
August.....	235	159	215	2.36	2.72	13,200	A.
September.....	2,680	136	464	5.10	5.69	27,600	A.
The year.....	12,000	136	948	10.4	141.47	686,000	

Monthly discharge of North Fork of Skokomish River near Hoodspout—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1914-15.							
October.....	5,190	278	1,270	14.0	16.14	78,100	A.
November.....	3,930	800	1,500	16.5	18.41	89,300	A.
December.....	1,140	330	566	6.22	7.17	34,800	A.
January.....	1,890	392	867	9.53	10.99	53,300	A.
February.....	1,260	566	848	9.32	9.70	47,100	A.
March.....	3,140	462	989	10.9	12.57	60,800	A.
April.....	4,920	630	1,350	14.8	16.51	80,300	A.
May.....	1,310	536	806	8.86	10.22	49,600	A.
June.....	747	353	515	5.66	6.32	30,600	A.
July.....	379	208	279	3.07	3.54	17,200	A.
August.....	206	138	165	1.81	2.09	10,100	A.
September.....	178	100	128	1.41	1.57	7,620	A.
The year.....	5,190	100	771	8.47	115.23	559,000	
1915-16.							
October.....	1,810	105	428	4.70	5.42	26,300	A.
November.....	1,590	366	834	9.16	10.22	49,600	A.
December.....	6,200	730	1,660	18.2	20.98	102,000	A.
January.....	1,550	300	545	5.99	6.91	33,500	A.
February.....	3,110	379	1,270	14.0	15.10	73,000	A.
March.....	2,430	646	1,330	14.6	16.83	81,800	A.
April.....	1,100	747	948	10.4	11.60	56,400	A.
May.....	1,540	800	1,080	11.0	13.72	66,400	A.
June.....	2,250	800	1,300	14.3	15.95	77,400	A.
July.....	1,540	696	1,060	11.6	13.37	65,200	A.
August.....	747	366	517	5.68	6.55	31,800	A.
September.....	366	168	238	2.62	2.92	14,200	A.
The year.....	6,200	105	934	10.3	139.57	678,000	
1916-17.							
October.....	1,230	124	195	2.14	2.47	12,000	A.
November.....	2,010	297	684	7.52	8.39	40,700	A.
December.....	1,490	300	536	5.89	6.79	33,000	A.
January.....	1,380	290	491	5.40	6.23	30,200	A.
February.....	854	290	564	6.20	6.46	31,300	A.
March.....	713	271	394	4.33	4.99	24,200	A.
April.....	965	476	751	8.25	9.20	44,700	A.
May.....	1,490	662	1,010	11.1	12.80	62,100	A.
June.....	1,440	818	1,100	12.1	13.50	65,500	A.
July.....	1,220	476	871	9.57	11.03	53,600	A.
August.....	476	224	333	3.66	4.22	20,500	A.
September.....	406	162	223	2.45	2.73	13,300	A.
The year.....	2,010	124	596	6.55	88.81	431,000	
1917-18.							
October.....	280	130	168	1.85	2.13	10,300	A.
November.....	2,120	144	500	5.49	6.12	29,800	A.
December.....	7,770	366	2,290	25.2	29.05	141,000	A.
January.....	4,410	598	1,530	16.8	19.37	94,100	A.
February.....	2,660	467	1,110	12.2	12.70	61,600	A.
March.....	3,260	338	1,010	11.1	12.80	62,100	A.
April.....	1,520	553	806	8.86	9.88	48,000	A.
May.....	1,000	386	577	6.34	7.31	35,500	A.
June.....	730	.....	447	4.91	5.48	26,600	A.
July.....	.....	167	221	2.43	2.80	13,600	A.
August.....	240	127	158	1.74	2.01	9,720	A.
September.....	127	89	104	1.14	1.27	6,190	A.
The year.....	7,770	89	744	8.18	110.92	539,000	
1918-19.							
October.....	2,850	92	475	5.22	6.02	29,200	A.
November.....	2,310	439	906	9.96	11.11	53,900	A.
December.....	6,150	453	1,590	17.5	20.18	97,800	A.
January.....	5,410	412	1,490	16.4	18.91	91,600	A.
February.....	4,850	598	1,170	12.9	13.43	65,000	A.
March.....	1,280	510	684	7.52	8.67	42,100	A.
April.....	2,040	614	1,090	12.0	13.39	64,900	A.
May.....	2,040	646	975	10.7	12.34	60,000	A.
June.....	1,080	679	857	9.42	10.51	51,000	A.
July.....	890	439	683	7.51	8.66	42,000	A.
August.....	426	201	298	3.27	3.77	18,300	A.
September.....	201	130	168	1.85	2.06	10,000	A.
The year.....	6,150	92	864	9.49	129.05	626,000	

NOTE.—Maximum discharge during entire period of record, 14,000 second-feet Jan. 6, 1914; minimum discharge, 89 second-feet, Sept. 28, 1918.

Yearly discharge of North Fork of Skokomish River near Hoodspert.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1914.....	12,000	136	215	Aug.....	948	10.4	141.47	686,000
1915.....	5,190	100	128	Sept.....	771	8.47	115.23	559,000
1916.....	6,200	105	238	Sept.....	934	10.3	139.57	678,000
1917.....	2,010	124	195	Oct.....	596	6.55	88.81	431,000
1918.....	7,770	89	104	Sept.....	744	8.18	110.92	539,000
1919.....	6,150	92	168	Sept.....	864	9.49	129.05	626,000
The period.	12,000	89	104	Sept., 1918.	810	8.90	120.84	586,000

NISQUALLY RIVER BASIN.

NISQUALLY RIVER NEAR ASHFORD (13).

Half a mile below west boundary of Mount Rainier National Park and 7 miles east of Ashford, in Pierce County.

Gage heights obtained by measuring to water surface from reference point on foot-bridge.

Drainage area, 66 square miles (revised); measured on topographic map, Rainier National Forest map, and Plate IV, Water-Supply Paper 313.

Monthly discharge of Nisqually River near Ashford.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910.							
November.....	3,400	280	838	12.7	14.17	49,900	C.
December.....	430	152	253	3.83	4.42	15,600	B.
1911.							
January.....	245	152	178	2.70	3.11	10,900	B.
February.....	152	92	116	1.76	1.83	6,440	C.
March.....	280	92	145	2.20	2.54	8,920	B.
April.....	320	136	192	2.91	3.25	11,400	B.
May.....	640	245	335	5.08	5.86	20,600	B.
June.....	1,100	360	598	9.06	10.11	35,600	C.
July.....	750	260	508	7.70	8.88	31,200	C.
August.....	370	215	268	4.06	4.68	16,500	C.
September.....	800	215	336	5.09	5.68	20,000	C.
October.....	245	190	209	3.17	3.66	12,900	B.
November.....	1,800	190	473	7.17	8.00	28,100	C.
December.....	350	230	285	4.32	4.98	17,500	B.
The year.....	1,800	92	304	4.61	62.58	220,000	

NISQUALLY RIVER NEAR LA GRANDE (14).

Water-stage recorder (Pl. I, B) just below diversion dam for municipal power plant of city of Tacoma, 4 miles above La Grande, in Pierce County.

Prior to September 8, 1910, staff gage just below dam site; beginning that date, staff gage at site of power plant at La Grande. All discharge measurements made near the dam. Records show total flow at the dam.

Drainage area, 287 square miles (revised); measured on topographic map, Rainier National Forest map, and Plate IV, Water-Supply Paper 313.

Monthly discharge of Nisqually River near La Grande.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1906.							
September 5-30.....	930	320	573	2.00	1.93	29,500	B.
1906-7.							
October.....	3,520	440	1,150	4.01	4.62	70,700	B.
November.....		730	^a 5,000	17.4	19.41	298,000	D.
December.....	5,920	910	2,570	8.95	10.32	158,000	B.
January.....	3,000	660	1,550	5.40	6.23	95,300	B.
February.....	7,020	1,690	2,880	10.0	10.41	160,000	C.
March.....	1,890	580	954	3.32	3.83	58,700	B.
April.....	4,060	950	1,810	6.31	7.04	108,000	B.
May.....	2,100	1,160	1,510	5.26	6.06	92,800	B.
June.....	1,750	660	1,080	3.76	4.20	64,300	B.
July.....	1,390	760	1,000	3.48	4.01	61,500	B.
August.....	1,330	470	718	2.50	2.88	44,100	B.
September.....	1,160	380	662	2.31	2.58	39,400	B.
The year.....		380	1,730	6.03	81.59	1,250,000	
1907-8.							
October.....	620	410	520	1.81	2.09	32,000	B.
November.....	5,220	380	1,370	4.77	5.32	81,500	B.
December.....			^a 1,800	6.27	7.23	111,000	D.
January.....	3,080	760	1,740	6.06	6.99	107,000	B.
February.....	2,170	620	1,230	4.29	4.63	70,800	B.
March.....	6,360	660	1,920	6.69	7.71	118,000	B.
April.....	7,020	810	1,990	6.93	7.73	118,000	B.
May.....	2,400	1,220	1,670	5.82	6.71	103,000	B.
June.....	2,550	1,220	1,750	6.10	6.81	104,000	B.
July.....	2,550	1,270	1,770	6.17	7.11	109,000	B.
August.....	1,480	770	967	3.37	3.88	59,500	B.
September.....	870	410	551	1.92	2.14	32,800	B.
The year.....	7,020	380	1,440	5.02	68.35	1,050,000	
1908-9.							
October.....	1,320	350	568	1.98	2.28	34,900	B.
November.....	2,550	410	1,230	4.29	4.79	73,200	B.
December.....	4,060	410	1,210	4.22	4.86	74,400	B.
May 9-31.....	2,510	1,170	1,590	5.54	4.74	72,500	B.
June.....	3,660	1,220	1,940	6.76	7.54	115,000	B.
July.....	1,630	820	1,180	4.11	4.74	72,600	B.
August.....	945	530	738	2.57	2.96	45,400	B.
September.....	1,020	335	560	1.95	2.18	33,300	B.
1909-10.							
October.....	570	305	386	1.34	1.54	23,700	B.
November.....	9,000	690	3,550	12.4	13.83	211,000	B.
December.....	4,420	820	1,920	6.69	7.71	118,000	B.
January.....	4,330	550	1,530	5.33	6.14	94,100	B.
February.....	3,880	795	1,640	5.71	5.95	91,100	B.
March.....	10,600	1,370	3,210	11.2	12.91	197,000	B.
April.....	3,310	1,370	2,100	7.32	8.17	125,000	B.
May.....	2,710	1,170	1,660	5.78	6.66	102,000	B.
June.....	1,660	530	982	3.42	3.82	58,400	B.
July.....	1,120	610	761	2.65	3.06	46,700	B.
August.....	920	470	642	2.24	2.58	39,500	B.
September.....	606	380	483	1.68	1.87	28,700	B.
The year.....	10,600	305	1,570	5.47	74.24	1,140,000	
1910-11.							
October.....	2,840	624	1,310	4.56	5.26	80,600	B.
November.....	10,500	642	2,870	10.0	11.16	171,000	B.
December.....	3,000	910	1,820	6.34	7.31	112,000	B.
January.....	2,680	785	1,320	4.60	5.30	81,200	B.
February.....	910	490	680	2.37	2.47	37,800	B.
March.....	2,070	502	1,020	3.55	4.09	62,700	B.
April.....	1,790	682	1,130	3.94	4.40	67,200	B.
May.....	4,280	1,930	2,690	9.37	10.80	165,000	B.
June 1-20.....	3,320	1,580	2,340	8.15	6.06	92,800	B.
September.....	1,650	402	751	2.62	2.92	44,700	B.
October.....	1,720	556	1,150	4.01	4.62	70,700	C.

^a Estimated by comparison with Cedar River near Ravensdale.

EAST CREEK NEAR ELBE (15).

Staff gage at Lutkens ranch, $1\frac{1}{2}$ miles above mouth and $1\frac{1}{2}$ miles southwest of Elbe, in Lewis County.

The gaging station is equipped with a measuring bridge and an artificial wooden control (Pl. II, A).

Monthly discharge of East Creek near Elbe for the year ending Sept. 30, 1918.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1918.					
August 12-31.....	3.7	2.1	2.75	109	A.
September.....	3.0	1.6	1.81	108	A.
1918-19.					
October.....	77	2.4	13.2	812	A.
November.....	548	20	87.1	5,180	A.
December.....	865	27	125	7,690	C.
January.....	1,190	24	258	15,900	C.
February.....	697	32	95.5	5,300	A.
March.....	366	48	98.8	6,080	A.
April.....	504	42	117	6,960	A.
May.....	78	30	46.0	2,830	A.
June.....	28	9.4	19.1	1,140	A.
July.....	9.1	3.0	5.17	318	A.
August.....	3.7	1.7	2.60	160	A.
September.....	8.5	1.8	2.92	174	A.
The year.....	1,190	1.7	72.4	52,500	.....

NOTE.—Maximum discharge during period of record, 1,430 second-feet at 3 p. m. Jan. 22, 1919; minimum discharge, 1.6 second-feet, Sept. 15-29, 1918.

PUYALLUP RIVER BASIN.

PUYALLUP RIVER NEAR ELECTRON (16).

Water-stage recorder 1,000 feet above intake of Puget Sound Power & Light Co.'s flume, a quarter of a mile below Mowich River, and 10 miles southeast of Electron, in Pierce County.

Drainage area, 91 square miles; measured on Plate IV, Water-Supply Paper 313.

Monthly discharge of Puyallup River near Electron.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1908-9.							
October.....			280	3.08	3.55	17,200	D.
November.....			350	3.85	4.30	20,800	D.
December.....			260	2.86	3.30	16,000	D.
January.....	1,410	165	418	4.59	5.29	25,700	C.
February.....	495	173	273	3.00	3.12	15,200	C.
March.....	275	170	205	2.25	2.59	12,600	C.
April.....	365	166	217	2.38	2.66	12,900	C.
May.....	750	255	380	4.18	4.82	23,400	B.
June.....	1,390	495	724	7.96	8.88	43,100	B.
July.....	715	390	542	5.96	6.87	33,300	B.
August.....	820	318	451	4.96	5.72	27,700	B.
September.....	580	215	361	3.97	4.43	21,500	B.
The year.....	1,410	165	372	4.09	55.53	269,000	

Monthly discharge of Puyallup River near Electron—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square miloc.	Inches.	Acre-feet.	
1909-10.							
October.....	365	136	224	2.46	2.84	13,800	C.
November.....	2,490	181	944	10.4	11.60	56,200	C.
December.....	1,190	178	368	4.04	4.66	22,600	C.
January.....	860	120	264	2.90	3.34	16,200	C.
February.....	445	168	251	2.76	2.87	13,900	B.
March.....	1,830	290	671	7.37	8.50	41,300	B.
April.....	1,100	272	477	5.24	5.85	28,400	B.
May.....	940	330	533	5.86	6.76	32,800	B.
June.....	1,180	272	413	4.54	5.06	24,600	C.
July.....	800	290	554	6.09	7.02	34,100	C.
August.....	695	284	437	4.80	5.53	26,900	C.
September.....	570	154	296	3.25	3.63	17,600	C.
The year.....	2,490	120	453	4.98	67.66	328,000	
1910-11.							
October.....	1,550	270	615	6.76	7.79	37,800	B.
November.....	3,200	290	873	9.59	10.70	51,900	C.
December.....	672	244	426	4.68	5.40	26,200	C.
January.....	530	180	319	3.51	4.05	19,600	B.
February.....	216	138	163	1.79	1.86	9,050	B.
March.....	495	130	230	2.53	2.92	14,100	A.
April.....	411	180	254	2.79	3.11	15,100	A.
May.....	1,000	251	448	4.92	5.67	27,500	A.
June.....	1,590	468	821	9.02	10.06	48,900	A.
July.....	1,410	551	766	8.42	9.71	47,100	B.
August.....	620	350	483	5.31	6.12	29,700	A.
September.....	715	205	390	4.29	4.79	23,200	A.
The year.....	3,200	130	484	5.32	72.18	350,000	
1911-12.							
October.....	425	156	214	2.35	2.71	13,200	A.
November.....	2,960	150	660	7.25	8.09	39,300	C.
December.....	518	220	352	3.87	4.46	21,600	B.
January.....	1,830	184	694	7.63	8.80	42,700	B.
February.....	920	262	515	5.66	6.10	29,600	A.
March.....	247	147	183	2.01	2.32	11,300	A.
April.....	338	219	264	2.90	3.24	15,700	A.
May.....	1,080	293	632	6.95	8.01	38,900	A.
June.....	1,360	598	950	10.4	11.60	56,500	A.
July.....	1,240	539	762	8.37	9.65	46,900	A.
August.....	1,500	397	723	7.95	9.16	44,500	A.
September.....	960	346	516	5.67	6.33	30,700	A.
The year.....	2,960	147	538	5.91	80.47	391,000	
1912-13.							
October.....	705	251	331	3.64	4.20	20,400	B.
November.....	1,990	262	654	7.19	8.02	38,900	B.
December.....	1,160	285	396	4.35	5.02	24,300	B.
January.....	2,210	133	442	4.86	5.60	27,200	B.
February.....	874	136	262	2.88	3.00	14,600	B.
March.....	275	125	168	1.85	2.13	10,300	B.
April.....	443	145	261	2.87	3.20	15,500	B.
May.....	1,500	170	522	5.74	6.62	32,100	B.
June.....	1,700	512	1,090	12.0	13.39	64,900	B.
July.....	1,670	460	916	10.1	11.60	56,300	B.
August.....	1,120	296	701	7.70	8.88	43,100	B.
September.....	2,330	306	548	6.02	6.72	32,600	B.
The year.....	2,330	125	526	5.78	78.38	380,000	
1913-14.							
October.....	1,010	239	446	4.90	5.65	27,400	B.
November.....	760	254	408	4.48	5.00	24,300	B.
December.....	412	174	253	2.78	3.20	15,600	B.
January.....	2,530	193	624	6.86	7.91	38,400	A.
February.....	704	188	290	3.19	3.32	16,100	A.
March.....	1,080	245	449	4.93	5.68	27,600	A.
April.....	1,240	235	508	5.58	6.23	30,200	A.
May.....	800	349	517	5.68	6.55	31,800	A.
June.....	891	340	548	6.02	6.72	32,600	A.
July.....	930	461	681	7.48	8.62	41,900	A.
August.....	774	371	574	6.31	7.28	35,300	A.
September.....	696	207	370	4.07	4.54	22,000	A.
The year.....	2,530	174	474	5.21	70.70	343,000	

Monthly discharge of Puyallup River near Electron—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1914-15.							
October.....	814	232	399	4.38	5.05	24,500	A.
November.....	1,540	296	715	7.86	8.77	42,500	A.
December.....	280	112	174	1.91	2.20	10,700	C.
January.....	321	171	215	2.36	2.72	13,200	A.
February.....	285	163	201	2.21	2.30	11,200	A.
March.....	445	161	243	2.67	3.08	14,900	A.
April.....	1,660	234	451	4.96	5.53	26,800	A.
May.....	1,280	218	385	4.23	4.88	23,700	A.
June.....	675	330	452	4.97	5.54	26,900	A.
July.....	922	403	635	6.98	8.05	39,000	A.
August.....	954	479	727	7.99	9.21	44,700	A.
September.....	506	194	300	3.30	3.68	17,900	A.
The year.....	1,660	112	409	4.49	61.01	296,000	
1915-16.							
October.....	1,320	235	476	5.23	6.03	29,300	A.
November.....	1,550	225	592	6.51	7.26	35,200	A.
December.....	1,700	301	598	6.57	7.57	36,800	A.
January.....	734	173	241	2.65	3.06	14,800	A.
February.....	1,290	236	660	7.25	7.82	38,000	A.
March.....	2,410	262	753	8.27	9.53	46,300	A.
April.....	743	330	436	4.79	5.34	25,900	A.
May.....	876	349	505	5.55	6.40	31,100	A.
June.....	1,680	487	882	9.69	10.81	52,500	B.
July.....	1,850	543	962	10.6	12.22	59,200	B.
August.....	990	328	693	7.62	8.78	42,600	A.
September.....	721	292	413	4.54	5.06	24,600	A.
The year.....	2,410	173	601	6.60	89.88	436,000	
1916-17.							
October.....	359	167	224	2.46	2.84	13,800	A.
November.....	959	189	364	4.00	4.46	21,700	A.
December.....	1,020	194	338	3.71	4.28	20,800	A.
January.....	690	198	328	3.60	4.15	20,200	A.
February.....	637	222	418	4.59	4.78	23,200	A.
March.....	340	157	198	2.18	2.51	12,200	A.
April.....	800	207	395	4.34	4.84	23,500	A.
May.....	1,080	344	590	6.48	7.47	36,300	A.
June.....	1,740	681	1,170	12.9	14.39	69,600	B.
July.....	1,780	648	1,260	13.8	15.91	77,500	B.
August.....	962	602	746	8.20	9.45	45,900	A.
September.....	602	309	461	5.07	5.66	27,400	A.
The year.....	1,780	157	541	5.95	80.74	392,000	
1917-18.							
October.....	423	185	290	3.19	3.68	17,800	A.
November.....	588	159	236	2.59	2.89	14,000	A.
December.....	3,990	178	1,410	15.5	17.87	86,700	B.
January.....	2,370	421	953	10.5	12.11	58,600	B.
February.....	1,080	228	498	5.47	5.70	27,700	A.
March.....	750	158	295	3.24	3.74	18,100	A.
April.....	566	232	359	3.95	4.41	21,400	A.
May.....	828	304	462	5.08	5.86	28,400	A.
June.....	1,340	405	842	9.25	10.32	50,100	A.
July.....	1,400	536	738	8.11	9.35	45,400	A.
August.....	1,070	434	655	7.20	8.30	40,300	A.
September.....	675	315	537	5.90	6.58	32,000	A.
The year.....	3,990	158	608	6.68	90.81	440,000	
1918-19.							
October.....	1,080	210	419	4.60	5.30	25,800	A.
November.....	558	204	312	3.43	3.83	18,600	A.
December.....	1,990	213	572	6.29	7.25	35,200	A.
January.....	2,520	164	639	7.02	8.09	39,300	A.
February.....	602	235	324	3.56	3.71	18,000	A.
March.....	417	178	248	2.73	3.15	15,200	A.
April.....	796	325	504	5.54	6.18	30,000	A.
May.....	1,250	353	579	6.36	7.33	35,600	A.
June.....	774	425	583	6.41	7.15	34,700	A.
July.....	1,000	500	687	7.55	8.70	42,200	A.
August.....	708	444	579	6.36	7.33	35,600	A.
September.....	556	190	352	3.87	4.32	20,900	A.
The year.....	2,520	164	485	5.33	72.34	351,000	

NOTE.—Maximum discharge during period of record, 4,800 second-feet at noon Dec. 18, 1917; minimum discharge estimated at 112 second-feet Dec. 24, 1914, when stage-discharge relation was affected by ice. Monthly discharge, October to December, 1908, estimated by comparison with record of Nisqually River near La Grande.

Yearly discharge of Puyallup River near Electron.

Year ending September 30.	Discharge in second feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1909.....	1,410	165	205	Mar.....	372	4.09	55.53	269,000
1910.....	2,490	120	224	Oct.....	453	4.98	67.66	328,000
1911.....	3,200	130	163	Feb.....	484	5.32	72.18	350,000
1912.....	2,960	147	183	Mar.....	538	5.91	80.47	391,000
1913.....	2,330	125	168	Mar.....	526	5.78	78.38	380,000
1914.....	2,530	174	253	Dec.....	474	5.21	70.70	343,000
1915.....	1,660	112	174	Dec.....	409	4.49	61.01	296,000
1916.....	2,410	173	241	Jan.....	601	6.60	89.88	436,000
1917.....	1,780	157	198	Mar.....	541	5.95	80.74	392,000
1918.....	3,990	158	236	Nov.....	608	6.68	90.81	440,000
1919.....	2,520	164	248	Mar.....	485	5.33	72.34	351,000
The period.	3,990	112	163	Feb., 1911	499	5.49	74.52	361,000

PUYALLUP RIVER AT ALDERTON (17).

Staff gage at county bridge 1 mile north of Alderton and 1½ miles above Stuck River, in Pierce County.

The operation of the Puget Sound Power & Light Co.'s plant at Electron does not materially affect the natural flow, as the pondage utilized is small.

Drainage area, 410 square miles; measured on Plate IV, Water-Supply Paper 313.

Monthly discharge of Puyallup River at Alderton.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1914-15.							
October.....			a 1,190	2.90	3.34	73,200	C.
November.....			a 2,980	7.27	8.11	177,000	D.
December.....	980	390	657	1.60	1.84	40,400	A.
January.....	1,820	570	1,040	2.54	2.93	64,000	A.
February.....	780	530	671	1.64	1.71	37,300	A.
March.....	1,440	610	865	2.11	2.43	53,200	A.
April.....	3,990	670	1,330	3.24	3.62	79,100	C.
May.....	4,690	610	1,090	2.66	3.07	67,000	A.
June.....	2,210	930	1,210	2.95	3.29	72,000	A.
July.....			1,380	3.37	3.88	84,800	C.
August.....		1,040	1,310	3.20	3.69	80,600	A.
September.....	880	390	607	1.48	1.65	36,100	A.
The year.....		390	1,190	2.90	39.56	865,000	
1915-16.							
October.....	3,990	390	1,150	2.80	3.23	70,700	A.
November.....	9,050	530	2,280	5.56	6.20	136,000	A.
December.....	11,400	1,380	2,920	7.12	8.21	180,000	A.
January.....	2,130	590	919	2.24	2.58	56,500	B.
February.....	5,590	760	2,930	7.15	7.71	169,000	A.
March.....	9,050	1,160	3,060	7.46	8.60	188,000	A.
April.....	2,840	1,360	1,660	4.05	4.52	98,800	A.
May.....	2,420	1,360	1,700	4.15	4.78	105,000	B.
June.....	3,610	1,460	2,180	5.32	5.94	130,000	B.
July.....	6,820	1,360	2,530	6.17	7.11	156,000	B.
August.....	1,650	850	1,350	3.29	3.79	83,000	A.
September.....	1,460	636	884	2.16	2.41	52,600	A.
The year.....	11,400	390	1,960	4.78	65.08	1,430,000	

a Estimated by comparison with Puyallup River at Puyallup and White River at Buckley.

Monthly discharge of Puyallup River at Alderton—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1916-17.							
October.....	736	436	519	1.27	1.46	31,900	A.
November.....	2,290	516	1,020	2.49	2.78	60,700	A.
December.....	6,630	830	1,640	4.00	4.61	101,000	B.
January.....	3,070	1,050	1,670	4.07	4.69	103,000	A.
February.....	3,070	1,050	1,810	4.41	4.59	101,000	A.
March.....	1,600	910	1,110	2.71	3.12	68,200	A.
April.....	3,680	1,120	2,180	5.32	5.94	130,000	B.
May.....	3,100	1,260	1,920	4.68	5.40	118,000	B.
June.....	4,670	2,110	3,280	8.00	8.93	195,000	B.
July.....	3,960	1,520	2,880	7.02	8.09	177,000	B.
August.....	1,700	1,180	1,380	3.37	3.88	84,800	A.
September.....	1,340	798	998	2.43	2.71	59,400	A.
The year.....	6,630	436	1,700	4.15	56.20	1,230,000	
1917-18.							
October.....	895	505	694	1.69	1.95	42,700	A.
November.....	1,340	430	620	1.51	1.68	36,900	A.
December.....	15,900	600	5,880	14.3	16.49	362,000	B.
January.....	12,400	2,330	4,300	10.5	12.11	264,000	B.
February.....	4,410	1,110	2,180	5.32	5.54	121,000	B.
March.....	2,830	830	1,300	3.17	3.66	79,900	A.
April.....	1,700	965	1,240	3.02	3.37	73,800	A.
May.....	2,110	1,110	1,350	3.29	3.79	83,000	B.
June.....	2,830	1,180	1,860	4.54	5.06	111,000	B.
July.....	2,330	1,180	1,480	3.61	4.16	91,000	B.
August.....	1,700	798	1,140	2.78	3.20	70,100	A.
September.....	1,110	600	888	2.17	2.42	52,800	A.
The year.....	15,900	430	1,920	4.68	63.43	1,390,000	
1918-19.							
October.....	2,830	528	941	2.30	2.65	57,900	B.
November.....	2,110	678	1,080	2.63	2.93	64,300	B.
December.....	8,070	765	2,180	5.32	6.13	134,000	B.
January.....	12,200	550	2,250	5.49	6.33	138,000	B.
February.....	2,110	1,110	1,500	3.66	3.81	83,300	A.
March.....	2,000	1,040	1,440	3.51	4.05	88,500	A.
April.....	3,240	1,520	2,040	4.98	5.56	121,000	A.
May.....	3,660	1,260	1,860	4.54	5.23	114,000	A.
June.....	1,800	1,180	1,520	3.71	4.14	90,400	A.
July.....	2,000	965	1,400	3.41	3.93	86,100	A.
August.....	1,260	798	1,030	2.51	2.89	63,300	A.
September.....	1,700	528	769	1.88	2.10	45,800	A.
The year.....	12,200	528	1,500	3.66	49.75	1,090,000	

NOTE.—Maximum discharge during period of record, 19,300 second-feet at 8 p. m. Dec. 18, 1917; minimum discharge, 390 second-feet, Dec. 22 and 24, 1914, Sept. 29-30 and Oct. 12, 1915.

Yearly discharge of Puyallup River at Alderton.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maxi- mum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre feet.	
		Day.	Calendar month.					
			Mean.					Month.
1915.....		390	607	Sept.....	1,190	2.90	39.56	865,000
1916.....	11,400	390	884	Sept.....	1,960	4.78	65.08	1,430,000
1917.....	6,630	436	519	Oct.....	1,700	4.15	56.20	1,230,000
1918.....	15,900	430	620	Nov.....	1,920	4.68	63.43	1,390,000
1919.....	12,200	528	769	Sept.....	1,500	3.66	49.75	1,090,000
The period.	15,900	390	519	Oct., 1916.	1,650	4.03	54.80	1,200,000

PUYALLUP RIVER AT PUYALLUP (18).

Water-stage recorder (Pl. II. B) a quarter of a mile above Puget Sound Electric Railway bridge, 1 mile north of Puyallup, and 2 miles below Stuck River, in Pierce County.

Two hydroelectric plants, owned by the Puget Sound Power & Light Co., divert water above the station. Water for the Electron plant is diverted from Puyallup River 10 miles above Electron into an equalizing basin having a capacity of 185 acre-feet; water used at this plant is returned directly to the river. Water for the Dieringer plant is diverted from White River at Buckley into Lake Tapps (capacity, 51,000 acre-feet), and after use is discharged into Stuck River.

Drainage area, 914 square miles; includes White River (west side) drainage area; measured on Plates IV and XI, Water-Supply Paper 313.

Monthly discharge of Puyallup River at Puyallup.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1914.							
May.....	5,060	2,870	3,500			215,000	B.
June.....	4,370	2,480	3,270			195,000	B.
July.....	3,180	1,970	2,560			157,000	B.
August.....	2,220	1,660	1,970			121,000	B.
September.....	2,400	1,340	1,630			97,000	B.
The period.....						785,000	
1914-15.							
October.....	2,980	1,280	1,870			115,000	C.
November.....	^a 8,800	2,190	4,820			287,000	B.
December.....	2,090	1,280	1,590			97,800	B.
January.....	3,020	1,340	2,060			127,000	B.
February.....	1,880	1,280	1,480			82,200	B.
March.....	2,450	1,310	1,640			101,000	B.
April.....	8,040	1,710	3,020			180,000	B.
May.....	6,410	1,590	2,320			143,000	B.
June.....	3,990	2,190	2,700			161,000	B.
July.....	3,260	1,960	2,590			159,000	B.
August.....	2,980	1,920	2,330			143,000	B.
September.....	1,710	1,190	1,410			83,900	B.
The year.....	^a 8,800	1,190	2,320	2.54	34.47	1,680,000	
1915-16.							
October.....		1,190	2,040			125,000	B.
November.....	11,800	1,250	3,830			228,000	A.
December.....	17,800	2,560	4,800			295,000	A.
January.....	2,980		1,810			111,000	B.
February.....	8,780	1,600	5,010			288,000	B.
March.....	16,500	2,450	6,520			401,000	B.
April.....	6,060	2,910	3,880			231,000	A.
May.....	7,160	3,310	4,510			277,000	A.
June.....	10,500	3,240	5,810			346,000	B.
July.....	15,700	3,040	5,950			366,000	B.
August.....	4,410	1,750	2,900			178,000	A.
September.....	3,240	1,380	1,930			115,000	A.
The year.....	17,800	1,190	4,080	4.46	60.70	2,960,000	
1916-17.							
October.....	1,480	1,120	1,310			80,600	A.
November.....	4,320	1,330	2,000			119,000	A.
December.....	12,100	1,530	2,970			183,000	B.
January.....	5,920	1,600	2,970			183,000	A.
February.....	5,880	1,860	3,580			199,000	A.
March.....	3,040		1,900			117,000	B.
April.....	8,500	2,040	4,670			278,000	A.
May.....	8,030	3,480	5,050			311,000	A.
June.....	12,200	5,180	8,260			492,000	A.
July.....	8,800	3,200	6,370			392,000	A.
August.....	3,590		2,730			168,000	B.
September.....		1,600	1,850			110,000	B.
The year.....	12,200	1,120	3,630	3.97	53.88	2,630,000	

^a Determined by hydrographic comparison with records of White River at Buckley and Puyallup River near Electron.

Monthly discharge of Puyallup River at Puyallup—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....			1,450			89,200	B.
November.....	1,860	870	1,290			76,800	A.
December.....	35,600	1,220	11,200			689,000	B.
January.....	20,000	4,470	7,630			469,000	A.
February.....	7,610	2,020	4,150			230,000	A.
March.....	5,770	1,340	2,620			161,000	A.
April.....	4,040	2,140	2,960			176,000	A.
May.....	4,830	2,450	3,360			207,000	A.
June.....	6,320	1,900	4,340			258,000	A.
July.....	4,880	1,840	2,700			166,000	A.
August.....		1,660	2,230			137,000	B.
September.....	2,220	1,440	1,940			115,000	A.
The year.....	35,600	870	3,830	4.19	56.87	2,770,000	
1918-19.							
October.....	4,970	1,100	1,990			122,000	A.
November.....	3,550	1,710	2,350			140,000	B.
December.....	15,000	1,810	4,800			295,000	B.
January.....	32,600	1,480	5,820			358,000	B.
February.....	3,880	2,320	2,840			158,000	B.
March.....	3,960	2,260	2,860			176,000	B.
April.....	6,170	3,080	4,370			260,000	B.
May.....	7,190	2,580	4,010			247,000	B.
June.....	5,010	2,940	3,780			225,000	B.
July.....	4,160	2,380	3,190			196,000	A.
August.....	2,560	1,930	2,240			138,000	A.
September.....	2,500	1,290	1,840			109,000	A.
The year.....	32,600	1,100	3,350	3.67	49.82	2,420,000	

NOTE.—Maximum discharge during period of record, 40,500 second-feet at 4.45 p. m. Dec. 18, 1917; minimum discharge, 726 second-feet at 8 a. m. Nov. 18, 1917.

Yearly discharge of Puyallup River at Puyallup.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1915.....	8,800	1,190	1,410	Sept.....	2,320	2.54	34.47	1,680,000
1916.....	17,800	1,190	1,810	Jan.....	4,080	4.46	60.70	2,960,000
1917.....	12,200	1,120	1,310	Oct.....	3,630	3.97	53.88	2,630,000
1918.....	35,600	870	1,290	Nov.....	3,830	4.19	56.87	2,770,000
1919.....	32,600	1,100	1,840	Sept.....	3,350	3.67	49.82	2,420,000
The period.	35,600	870	1,290	Nov., 1917.	3,440	3.77	51.15	2,490,000

CARBON RIVER AT FAIRFAX (19).

Staff gage at Northern Pacific Railway bridge at Fairfax, in Pierce County.

Drainage area, 79 square miles, measured on Plate IV, Water-Supply Paper 313.

Monthly discharge of Carbon River at Fairfax.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910-11.							
November 23-30.....	1,100	305	568	7.19	2.14	9,010	B.
December.....	650	255	392	4.96	5.72	24,100	B.
January.....	460	155	260	3.29	3.79	16,000	A.
February.....	185	85	120	1.52	1.58	6,660	A.
March.....	405	98	191	2.42	2.79	11,700	A.
April.....	260	155	202	2.56	2.86	12,000	A.
May.....	755	220	356	4.51	5.20	21,900	A.
June.....	1,100	440	628	7.95	8.87	37,400	C.
July.....	820	405	567	7.18	8.28	34,900	B.
August.....	510	280	400	5.06	5.83	24,600	C.
September.....	460	155	287	3.63	4.05	17,100	C.
The period.....						215,000	
1911-12.							
October.....	185	85	121	1.53	1.76	7,440	B.
November.....	2,840	74	668	8.46	9.44	39,700	C.
December.....	550	126	264	3.34	3.85	16,200	B.
January.....	2,110	126	650	8.23	9.49	40,000	C.
February.....	962	276	586	7.42	8.00	33,700	B.
March.....	266	99	153	1.94	2.24	9,410	B.
April.....	456	122	264	3.34	3.73	15,700	B.
May.....	1,260	280	778	9.85	11.36	47,800	B.
June.....	1,300	669	950	12.0	13.39	56,500	B.
July 1-12.....	788	618	668	8.46	3.78	15,900	B.
The period.....						282,000	

WHITE RIVER AT BUCKLEY (20).

Gage at Northern Pacific Railway bridge 1 mile northeast of Buckley, in Pierce County, except from June 8 to September 30, 1910, when it was at Mud Mountain, 5 miles upstream.

Wire or staff gages used prior to January 18, 1913; water-stage recorder used after that date.

White River flume diverts water from river half a mile above gage. Total monthly discharge, after flume was built, computed from determinations of combined flow of river and flume.

Drainage area, 424 square miles; measured on Plate XI, Water-Supply Paper 313.

Monthly discharge of White River at Buckley.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1899.							
April 22-30.....	1,680	1,470	1,540	3.63	1.22	27,500	A.
May.....	3,980	1,260	2,560	6.04	6.96	157,000	A.
June.....	6,880	2,830	4,080	9.62	10.73	243,000	A.
July.....	4,500	2,100	3,030	7.15	8.24	186,000	A.
August.....	3,040	1,310	1,650	3.89	4.48	101,000	A.
September.....	1,550	890	1,150	2.71	3.02	68,400	A.
The period.....						783,000	

Monthly discharge of White River at Buckley—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1899-1900.							
October.....	3,490	650	1,360	3.21	3.70	83,600	A.
November.....	7,560	940	2,680	6.32	7.05	159,000	B.
December.....	14,200	1,750	4,400	10.4	11.99	271,000	C.
January.....	13,100	1,380	3,020	7.12	8.21	186,000	C.
February.....	2,820	1,270	1,670	3.94	4.10	92,800	B.
March.....	5,280	1,490	2,240	5.28	6.09	138,000	B.
April.....	3,020	1,270	1,860	4.39	4.90	110,000	B.
May.....	3,220	1,620	2,240	5.28	6.09	138,000	A.
June.....	4,700	1,620	2,210	5.21	5.81	132,000	A.
July.....	2,120	1,170	1,510	3.56	4.10	92,800	A.
August.....	3,440	890	1,140	2.69	3.10	70,100	A.
September.....	1,270	680	836	1.97	2.20	49,700	B.
The year.....	14,200	650	2,100	4.95	67.34	1,520,000	
1900-1901.							
October.....	3,920	620	1,270	3.00	3.46	78,100	B.
November.....	2,820	780	1,510	3.56	3.97	89,800	B.
December.....	8,640	1,320	2,660	6.27	7.23	164,000	B.
January.....	11,200	930	1,820	4.29	4.95	112,000	C.
February.....	10,400	780	1,950	4.60	4.79	108,000	C.
March.....	8,280	1,020	1,850	4.36	5.03	114,000	B.
April.....	1,900	930	1,270	3.00	3.35	75,600	B.
May.....	4,160	1,380	2,360	5.57	6.42	145,000	B.
June.....	3,440	1,490	2,140	5.05	5.63	127,000	B.
July.....	2,120	1,270	1,650	3.89	4.48	101,000	B.
August.....	1,320	780	1,060	2.50	2.88	65,200	B.
September.....	780	490	620	1.46	1.63	36,900	B.
The year.....	11,200	490	1,680	3.96	53.82	1,220,000	
1901.							
October.....	1,620	490	584	1.38	1.59	35,900	A.
November.....	14,600	710	1,930	4.55	5.08	115,000	B.
December.....	5,900	930	1,850	4.36	5.03	114,000	C.
The period.....						265,000	
1910.							
June 8-30.....	2,910	1,340	1,700	4.01	3.43	77,600	C.
July.....	1,670	1,100	1,340	3.16	3.64	82,400	C.
August.....	1,180	732	949	2.24	2.58	58,400	C.
September.....	920	545	673	1.59	1.77	40,000	C.
The period.....						258,000	
1910-11.							
October.....	3,700	870	1,580	3.73	4.30	97,200	B.
November.....	8,700	870	2,680	6.32	7.05	159,000	B.
December.....	2,500	1,090	1,710	4.03	4.65	105,000	A.
January.....	2,500	850	1,380	3.25	3.75	84,800	A.
February.....	1,020	460	669	1.58	1.64	37,200	A.
March.....	2,260	460	1,060	2.50	2.88	65,200	A.
April.....	1,920	700	1,160	2.74	3.06	69,000	A.
May.....	2,630	1,330	1,840	4.34	5.00	113,000	A.
June.....	3,800	1,650	2,500	5.90	6.53	149,000	A.
July.....	2,320	963	1,550	3.66	4.22	95,300	A.
August.....	925	600	702	1.66	1.91	43,200	B.
September.....	1,210	425	634	1.50	1.67	37,700	B.
The year.....	8,700	425	1,460	3.44	46.71	1,060,000	
1911.							
October.....	530	390	429	1.01	1.16	26,400	B.
November.....	11,100	530	2,010	4.74	5.29	120,000	B.
The period.....						146,000	

Monthly discharge of White River and flume at Buckley.

Month.	Discharge in second-feet.						Run-off—combined.		Accuracy.
	Combined.		River mean.	Flume mean.	Combined.		Inches.	Acre-feet.	
	Maximum.	Minimum.			Mean.	Per square mile.			
1913.									
January 18-31.....			671	647	1,320	3.11	1.62	36,700	B.
March.....	1,360	603	450	582	1,030	2.43	2.80	63,300	B.
April.....	2,460	622	939	773	1,710	4.03	4.50	102,000	B.
May.....	4,290	1,290	2,140	120	2,260	5.33	6.14	139,000	B.
June.....	4,850	2,400	2,150	1,130	3,280	7.74	8.64	195,000	B.
July.....	2,710	1,400	1,380	733	2,110	4.98	5.74	130,000	B.
August.....	1,590	740	370	695	1,070	2.52	2.90	65,800	B.
September.....	2,070	519	143	627	770	1.82	2.03	45,800	B.
1913-14.									
October.....	1,620	432	303	616	919	2.17	2.50	56,500	B.
November.....	1,270	651	374	585	959	2.26	2.52	57,100	B.
December.....	1,060	426	119	560	679	1.60	1.84	41,800	B.
January.....	5,250	650	1,160	593	1,750	4.13	4.76	108,000	B.
February.....	2,320	801	524	583	1,110	2.62	2.73	61,600	B.
March.....	2,480	968	1,020	595	1,620	3.82	4.40	99,600	B.
April.....	2,640	922	1,200	588	1,790	4.22	4.71	107,000	B.
May.....	2,640	1,470	1,440	604	2,040	4.81	5.54	125,000	B.
June.....	2,610	1,120	1,320	382	1,700	4.01	4.47	101,000	B.
July.....	1,880	927	614	701	1,320	3.11	3.58	81,200	B.
August.....	1,140	676	91.9	774	866	2.04	2.35	53,200	B.
September.....	847	405	38.3	550	588	1.39	1.55	35,000	B.
The year.....	5,250	405	685	595	1,280	3.02	40.95	927,000	
1914-15.									
October.....	1,000	439	97.7	569	667	1.57	1.81	41,000	B.
November.....	3,570	881	1,340	460	1,800	4.25	4.74	107,000	B.
December.....	870	442	12.8	589	602	1.42	1.64	37,000	B.
January.....	793	533	17.4	642	659	1.55	1.79	40,500	B.
February.....	701	575	11.5	614	626	1.48	1.54	34,800	B.
March.....	1,260	647	152	721	873	2.06	2.38	53,700	B.
April.....	3,210	976	986	554	1,540	3.63	4.05	91,600	B.
May.....	2,560	905	627	599	1,230	2.90	3.34	75,600	B.
June.....	1,840	1,170	828	570	1,400	3.30	3.68	83,300	B.
July.....	1,390	916	533	614	1,150	2.71	3.12	70,700	B.
August.....	1,220	750	270	660	931	2.20	2.54	57,200	B.
September.....	821	429	10.6	543	553	1.30	1.45	32,900	B.
The year.....	3,570	429	406	595	1,000	2.36	32.08	725,000	
1915-16.									
October.....	1,360	428	100	559	659	1.55	1.79	40,500	A.
November.....	6,040	553	1,190	665	1,850	4.36	4.86	110,000	A.
December.....	6,080	1,010	1,220	707	1,930	4.55	5.25	119,000	A.
January.....	1,200	418	213	531	744	1.75	2.02	45,700	A.
February.....	4,070	538	1,210	710	1,920	4.53	4.89	110,000	A.
March.....	7,970	909	2,250	569	2,820	6.65	7.67	173,000	B.
April.....	2,840	1,500	1,390	636	2,030	4.79	5.34	121,000	B.
May.....	3,450	1,750	1,770	598	2,360	5.57	6.42	145,000	B.
June.....	6,420	2,120	2,830	623	3,450	8.14	9.08	205,000	B.
July.....	8,010	1,680	2,560	603	3,160	7.45	8.59	194,000	B.
August.....	2,060	1,040	739	766	1,500	3.54	4.08	92,200	A.
September.....	1,320	628	157	676	833	1.96	2.19	49,600	A.
The year.....	8,010	418	1,300	636	1,940	4.58	62.18	1,400,000	
1916-17.									
October.....	634	393	9.88	462	472	1.11	1.28	29,000	A.
November.....	1,990	502	55.8	725	781	1.84	2.05	46,500	A.
December.....	4,220	598	407	751	1,160	2.74	3.16	71,300	A.
January.....	2,400	614	606	656	1,260	2.97	3.42	77,500	A.
February.....	2,690	792	1,040	616	1,660	3.92	4.08	92,200	A.
March.....	1,030	610	116	616	732	1.73	1.99	45,000	A.
April.....	3,240	742	1,160	566	1,730	4.08	4.55	103,000	A.
May.....	4,640	1,700	2,070	614	2,680	6.32	7.29	165,000	B.
June.....	6,520	2,920	3,510	600	4,110	9.69	10.81	245,000	B.
July.....	4,460	1,500	2,460	555	3,020	7.12	8.21	186,000	B.
August.....	1,580	913	879	342	1,220	2.88	3.32	75,000	A.
September.....	872	588	162	572	734	1.73	1.93	43,700	A.
The year.....	6,520	393	1,040	589	1,630	3.84	52.09	1,180,000	

Monthly discharge of White River and flume at Buckley—Continued.

Month.	Discharge in second-feet.						Run-off—combined.		Accuracy.
	Combined.		River mean.	Flume mean.	Combined.		Inches.	Acre-feet.	
	Maximum.	Minimum.			Mean.	Per square mile.			
1917-18.									
October.....	658	413	3.19	508	511	1.21	1.40	31,400	A.
November.....	769	349	14.0	429	443	1.04	1.16	26,400	A.
December.....	18,100	452	4,150	857	5,010	11.8	13.60	308,000	C.
January.....	10,500		3,020	696	3,720	8.77	10.11	229,000	B.
February.....			1,070	674	1,740	4.10	4.27	96,600	B.
March.....	2,220		469	684	1,150	2.71	3.12	70,700	B.
April.....	2,250	1,170	920	636	1,560	3.68	4.11	92,800	B.
May.....	2,660	1,290	1,260	446	1,710	4.03	4.65	105,000	B.
June.....	3,600	1,600	1,730	632	2,360	5.57	6.21	140,000	B.
July.....	1,790		418	906	1,320	3.11	3.58	81,200	B.
August.....			50.0	860	910	2.15	2.48	56,000	B.
September.....			10.0	672	682	1.61	1.80	40,600	B.
The year.....	18,100	349	1,100	667	1,770	4.17	56.49	1,280,000	
1918-19.									
October.....	2,510		80.0	847	927	2.19	2.52	57,000	B.
November.....	1,650	740	216	732	948	2.24	2.50	56,400	B.
December.....	7,280	900	1,330	1,000	2,330	5.50	6.34	143,000	B.
January.....	17,400	693	2,060	853	2,910	6.86	7.91	179,000	B.
February.....			471	717	1,190	2.81	2.93	66,100	C.
March.....			352	864	1,220	2.88	3.32	75,000	C.
April.....	3,040	1,340	1,340	714	2,050	4.83	5.39	122,000	B.
May.....	4,410	1,510	1,440	873	2,310	5.45	6.28	142,000	B.
June.....	2,700	1,730	1,430	784	2,210	5.21	5.81	132,000	B.
July.....	2,180	1,140	880	810	1,690	3.99	4.60	104,000	B.
August.....	1,090	734	164	821	985	2.32	2.68	60,600	A.
September.....	974	417	23.7	613	637	1.50	1.67	37,900	A.
The year.....	17,400	417	818	805	1,620	3.82	51.95	1,180,000	

NOTE.—Maximum discharge during period of record, including flume, 18,100 second-feet Dec. 18, 1917; minimum discharge, including flume, 349 second-feet Nov. 19, 1917.

Yearly discharge of White River at Buckley.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1900.....	14,200	650	836	Sept.....	2,100	4.95	67.34	1,520,000
1901.....	11,200	490	620	Sept.....	1,680	3.96	53.82	1,220,000
1911.....	8,700	425	634	Sept.....	1,460	3.44	46.71	1,060,000
1914.....	5,250	405	588	Sept.....	1,280	3.02	40.95	927,000
1915.....	3,570	429	553	Sept.....	1,000	2.36	32.08	725,000
1916.....	8,010	418	659	Oct.....	1,940	4.58	62.18	1,400,000
1917.....	6,520	393	472	Oct.....	1,630	3.84	52.09	1,180,000
1918.....	18,100	349	443	Nov.....	1,770	4.17	56.49	1,280,000
1919.....	17,400	417	637	Sept.....	1,620	3.82	51.95	1,180,000
The period.	18,100	349	443	Nov., 1917.	1,610	3.79	51.51	1,170,000

GREENWATER RIVER NEAR ENUMCLAW (21).

Staff gage a quarter of a mile southeast of Christoff ranger station, 1 mile above mouth of river, and 17 miles east of Enumclaw, in Pierce County.

Drainage area, 76 square miles; measured on Plate XI, Water-Supply Paper 313.

Monthly discharge of Greenwater River near Enumclaw.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911-12.							
October.....	66	37	46.6	0.613	0.71	2,870	B.
November 1-14.....	270	37	125	1.64	.85	3,470	B.
December 12-31.....	245	66	163	2.14	1.59	6,470	B.
January.....	1,540	56	372	4.89	5.64	22,900	C.
February.....	710	125	314	4.13	4.45	18,100	B.
March.....	142	52	79.5	1.05	1.21	4,890	C.
April 1-14.....	265	141	185	2.43	1.26	5,140	B.

GREEN RIVER AT KANASKAT (22).

Staff gage located at the highway bridge at Kanaskat, King County.

Monthly discharge of Green River at Kanaskat.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
May.....	3,000	1,220	1,750	108,000	B.
June.....	2,240	625	1,090	64,900	A.
July.....	625	249	398	24,500	A.
August.....	249	132	186	11,400	A.
September.....	1,360	132	509	30,300	A.
October.....	308	222	276	17,000	A.
The period.....				256,000	

DUWAMISH RIVER BASIN.

CEDAR RIVER AT CEDAR LAKE, NEAR NORTH BEND (23).

Near outlet of Cedar Lake, 9 miles southwest of North Bend, in King County.

In 1898 and 1899, staff gage at Vaughn Bridge, 3,000 feet below the outlet; in 1902 and 1903, staff gage 800 feet below the outlet.

Drainage area, 75 square miles (revised); measured on topographic maps.

Monthly discharge of Cedar River at Cedar Lake, near North Bend.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1895.							
August.....			90	1.20	1.38	5,530	D.
September.....			116	1.55	1.73	6,900	D.
1895-96.							
October.....			91	1.21	1.40	5,600	D.
November.....			267	3.56	3.97	15,900	D.
December.....			728	9.71	11.20	44,800	D.
January.....			316	10.9	12.57	50,200	D.
February.....			847	11.3	12.19	48,700	D.
March.....			608	8.11	9.35	37,400	D.
April.....			499	6.65	7.42	29,700	D.
May.....			935	12.5	14.41	57,500	D.
June.....			1,390	18.5	20.64	82,700	D.
July.....			481	6.41	7.39	29,600	D.
August.....			130	1.73	1.99	7,990	D.
September.....			91	1.21	1.35	5,410	D.
The year.....			572	7.63	103.88	416,000	

Monthly discharge of Cedar River at Cedar Lake, near North Bend—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1896-97.							
October.....			87	1.16	1.34	5,350	D.
November.....			1,180	15.7	17.52	70,200	D.
December.....			1,540	20.5	23.63	94,700	D.
January.....			931	12.4	14.30	57,200	D.
February.....			816	10.9	11.35	45,300	D.
March.....			531	7.08	8.16	32,600	D.
April.....			1,050	14.0	15.62	62,500	D.
May.....			1,200	16.0	18.45	73,800	D.
June.....			879	11.7	13.05	52,300	D.
July.....			707	9.43	10.87	43,500	D.
August.....			205	2.73	3.15	12,600	D.
September.....			175	2.33	2.60	10,400	D.
The year.....			774	10.3	140.04	560,000	
1897-98.							
October.....			169	2.25	2.59	10,400	D.
November.....			989	13.2	14.73	58,800	D.
December.....			1,070	14.3	16.49	65,800	D.
January.....			483	6.44	7.42	29,700	D.
February.....			910	12.1	12.60	50,500	D.
March.....			272	3.63	4.18	16,700	D.
April.....			366	4.88	5.44	21,800	D.
May.....			783	10.4	11.99	48,100	D.
June.....			652	8.69	9.70	38,800	C.
July.....	355	89	203	2.71	3.12	12,500	B.
August.....	89	57	68.0	.907	1.05	4,180	B.
September.....	220	44	73.1	.975	1.09	4,350	B.
The year.....			499	6.65	90.40	362,000	
1898-99.							
October.....	285	106	168	2.24	2.58	10,300	B.
November.....	1,180	267	610	8.13	9.07	36,300	C.
December.....	3,580	135	684	9.12	10.51	42,100	C.
January.....	5,080	110	1,290	17.2	19.83	79,300	C.
February.....	3,280	350	1,110	14.8	15.41	61,600	C.
March.....	570	165	321	4.28	4.93	19,700	C.
April.....	1,760	165	590	7.87	8.78	35,100	C.
May 1-28.....	2,030	544	1,280	17.1	17.81	71,100	C.
The period.....						356,000	
1901.							
June.....			742	9.89	11.03	44,200	D.
July.....			307	4.09	4.72	18,900	D.
August.....			114	1.52	1.75	7,010	D.
September.....			113	1.51	1.68	6,720	D.
The period.....						76,800	
1901-2.							
October.....			108	1.44	1.66	6,640	D.
November.....			828	11.0	12.27	49,300	D.
December.....			776	10.3	11.87	47,700	D.
January.....			638	8.51	9.81	39,200	D.
February.....			418	5.57	5.80	23,200	D.
March.....			476	6.35	7.32	29,300	D.
April.....			444	5.92	6.60	26,400	D.
May.....			970	12.9	14.87	59,600	D.
June.....			639	8.52	9.51	38,000	D.
July.....			423	5.64	6.50	26,000	D.
August.....			135	1.80	2.08	8,300	D.
September.....			116	1.55	1.73	6,900	D.
The year.....			498	6.64	90.02	361,000	
1902-3.							
October.....			115	1.53	1.76	7,070	C.
November.....	1,170	198	668	8.91	9.94	39,700	B.
December.....	2,650	274	797	10.6	12.22	49,000	B.
January.....	4,310	402	1,260	16.8	19.37	77,500	B.
February.....	450	198	289	3.85	4.01	16,000	B.
March.....	546	175	243	3.24	3.74	14,900	B.
April.....	718	247	414	5.52	6.16	24,600	B.
May.....	1,470	514	894	11.9	13.72	55,000	B.
June.....	550	466	931	12.4	13.83	55,400	B.
July.....	596	142	340	4.53	5.22	20,900	B.
August.....			99	1.32	1.52	6,090	C.
September.....			242	3.23	3.60	14,400	D.
The year.....			526	7.01	95.09	381,000	

Monthly discharge of Cedar River at Cedar Lake, near North Bend—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1903-4.							
October.....			361	4.81	5.54	22,200	D.
November.....			624	8.32	9.28	37,100	D.
December.....			736	9.81	11.31	45,300	D.
January.....			768	10.2	11.76	47,200	D.
February.....			475	6.33	6.83	27,300	D.
March.....			450	6.00	6.92	27,700	D.
April.....			704	9.39	10.48	41,900	D.
May.....			800	10.7	12.34	49,200	D.
June.....			770	10.3	11.49	45,800	D.
July.....			351	4.68	5.40	21,600	D.
August.....			101	1.35	1.56	6,210	D.
September.....			96	1.28	1.43	5,710	D.
The year.....			520	6.93	94.34	377,000	
1904-5.							
October.....			78	1.04	1.20	4,800	D.
November.....			239	3.19	3.56	14,200	D.
December.....			545	7.27	8.38	33,500	D.
January.....			392	5.23	6.03	24,100	D.
February.....			313			17,400	D.
March.....			493			30,300	D.
April.....			390			23,200	D.
May.....			704			43,300	D.
June.....			611			36,400	D.
July.....			246			15,100	D.
August.....			134			8,240	D.
September.....			122			7,260	D.
The year.....			356	4.75	64.48	258,000	
1905-6.							
October.....			404			24,800	D.
November.....			374			22,300	D.
December.....			485			29,800	D.
January.....			654			40,200	D.
February.....			674			37,400	D.
March.....			382			23,500	D.
April.....			443			26,400	D.
May.....			481			29,600	D.
June.....			510			30,300	D.
July.....			244			15,000	D.
August.....			131			8,060	D.
September.....			126			7,500	D.
The year.....			407	5.43	73.71	295,000	
1906-7.							
October.....			392			24,100	D.
November.....			1,450			86,300	D.
December.....			1,040			64,000	D.
January.....			418			25,700	D.
February.....			1,030			57,200	D.
March.....			372			22,900	D.
April.....			542			32,300	D.
May.....			702			43,200	D.
June.....			437			26,000	D.
July.....			218			13,400	D.
August.....			105			6,460	D.
September.....			112			6,660	D.
The year.....			564	7.52	102.08	408,000	
1907.							
October.....			93			5,720	D.
November.....			593			35,300	D.
December.....			574			35,300	D.
The period.....						76,300	

NOTE.—Monthly discharge, August, 1895, to June, 1898; June, 1901, to October, 1902; and August, 1903, to December, 1907, estimated by comparison with record of Cedar River near Ravensdale as described and given in Water-Supply Paper 313, pp. 110-114. Flow partly controlled by regulation in Cedar Lake reservoir after Seattle municipal power plant was placed in operation in January, 1905.

Yearly discharge of Cedar River at Cedar Lake, near North Bend.

Year ending September 30.	Discharge in second-feet.		Annual mean.	Annual mean per square mile.	Annual run-off.	
	Minimum calendar month.				Inches.	Acre-feet.
	Mean.	Month.				
1896.....	91	Oct., Sept...	572	7.63	103.88	416,000
1897.....	87	Oct.....	774	10.3	140.04	560,000
1898.....	68	Aug.....	499	6.65	90.40	362,000
1902.....	108	Oct.....	498	6.64	90.02	361,000
1903.....	99	Aug.....	526	7.01	95.09	381,000
1904.....	96	Sept.....	520	6.93	94.34	377,000
1905.....	78	Oct.....	356	4.75	64.48	258,000
1906.....	126	Sept.....	407	5.43	73.71	295,000
1907.....	105	Aug.....	564	7.52	102.08	408,000
The period.....	68	Aug., 1898...	524	6.98	94.89	380,000

CEDAR RIVER AT CEDAR FALLS (24).

Water-stage recorder 0.7 mile below Seattle municipal power plant at Cedar Falls and 3½ miles above Taylor Creek in King County.

Flow partly controlled by regulation at Cedar Lake reservoir to accommodate requirements of Seattle municipal power plant.

Drainage area, 83 square miles; measured on topographic maps.

Monthly discharge of Cedar River at Cedar Falls.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1914.							
April 9-30.....	1,060	474	679	.....	.....	29,600	A.
May.....	786	300	525	.....	.....	32,300	A.
June.....	484	242	356	.....	.....	21,200	B.
July.....	232	150	187	.....	.....	11,500	A.
August.....	187	131	167	.....	.....	10,300	A.
September.....	216	94	147	.....	.....	8,750	A.
The period.....	.....	.....	.....	.....	.....	114,000	.....
1914-15.							
October.....	232	48	128	.....	.....	7,870	A.
November.....	678	188	338	.....	.....	20,100	A.
December.....	248	192	224	.....	.....	13,800	A.
January.....	236	154	204	.....	.....	12,500	B.
February.....	215	89	179	.....	.....	9,940	C.
March.....	233	152	191	.....	.....	11,700	A.
April.....	797	87	224	.....	.....	13,300	A.
May.....	180	36	71.7	.....	.....	4,410	A.
June.....	160	24	62.4	.....	.....	3,710	A.
July.....	103	15	31.3	.....	.....	5,000	A.
August.....	163	10	85.5	.....	.....	5,260	A.
September.....	216	85	179	.....	.....	10,700	A.
The year.....	797	10	164	1.98	26.88	118,000	.....
1915-16.							
October.....	242	154	218	.....	.....	13,400	A.
November.....	991	234	502	.....	.....	29,900	A.
December.....	1,560	280	515	.....	.....	31,700	A.
January.....	267	175	232	.....	.....	14,300	A.
February.....	1,100	208	525	.....	.....	30,200	A.
March.....	1,770	246	858	.....	.....	52,800	A.
April.....	810	407	565	.....	.....	33,600	A.
May.....	1,090	394	690	.....	.....	42,400	A.
June.....	1,430	594	873	.....	.....	51,900	A.
July.....	1,310	230	491	.....	.....	30,200	A.
August.....	277	170	237	.....	.....	14,600	A.
September.....	237	169	221	.....	.....	13,200	A.
The year.....	1,770	154	493	5.94	80.85	358,000	.....

Monthly discharge of Cedar River at Cedar Falls—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1916-17.							
October.....	244	42	145	.....	.....	8,920	A.
November.....	308	102	245	.....	.....	14,600	A.
December.....	334	223	283	.....	.....	17,400	A.
January.....	834	250	459	.....	.....	28,200	A.
February.....	1,420	292	671	.....	.....	37,300	A.
March.....	296	217	275	.....	.....	16,900	A.
April.....	893	217	459	.....	.....	27,300	A.
May.....	1,340	469	811	.....	.....	49,900	A.
June.....	1,840	978	1,420	.....	.....	84,500	A.
July.....	1,430	260	814	.....	.....	50,100	A.
August.....	314	181	258	.....	.....	15,900	A.
September.....	267	109	160	.....	.....	9,520	B.
The year.....	1,840	42	498	6.00	81.44	361,000	
1917-18.							
October.....	198	108	152	.....	.....	9,350	B.
November.....	215	43	150	.....	.....	8,930	B.
December.....	5,900	52	2,200	.....	.....	135,000	C.
January.....	4,340	656	1,390	.....	.....	85,500	B.
February.....	1,110	315	617	.....	.....	34,300	B.
March.....	553	290	363	.....	.....	22,300	A.
April.....	902	301	512	.....	.....	30,500	A.
May.....	1,110	191	502	.....	.....	30,900	A.
June.....	654	305	440	.....	.....	26,200	A.
July.....	355	81	213	.....	.....	13,100	C.
August.....	170	60	117	.....	.....	7,190	A.
September.....	158	93	123	.....	.....	7,320	A.
The year.....	5,900	43	567	6.83	92.71	411,000	
1918-19.							
October.....	664	102	227	.....	.....	14,000	A.
November.....	649	286	405	.....	.....	24,100	A.
December.....	960	281	506	.....	.....	31,100	A.
January.....	846	256	511	.....	.....	31,400	A.
February.....	610	107	311	.....	.....	17,300	A.
March.....	301	202	261	.....	.....	16,000	A.
April.....	394	234	319	.....	.....	19,000	A.
May.....	725	328	433	.....	.....	26,600	A.
June.....	644	287	395	.....	.....	23,500	A.
July.....	350	90	253	.....	.....	15,600	A.
August.....	140	60	106	.....	.....	6,520	A.
September.....	126	59	95.9	.....	.....	5,710	A.
The year.....	960	59	319	3.84	52.12	231,000	

NOTE.—Maximum discharge during period of record, 6,290 second-feet at 9 a. m. Dec. 19, 1917; no flow at 4 p. m. Nov. 25, 1917.

Yearly discharge of Cedar River at Cedar Falls.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1915.....	797	10	62.4	June.....	164	1.98	26.88	118,000
1916.....	1,770	154	218	Oct.....	493	5.94	80.85	358,000
1917.....	1,840	42	145	Oct.....	498	6.00	81.44	361,000
1918.....	5,900	43	117	Aug.....	567	6.83	92.71	411,000
1919.....	960	59	95.9	Sept.....	319	3.84	52.12	231,000
The period.	5,900	10	62.4	June, 1915.	408	4.92	66.80	296,000

CEDAR RIVER NEAR RAVENSDALE (25) AND LANDSBERG (26).

Original staff gage, used 1895 to 1898, at Clifford Bridge, Landsberg, 3 miles north-east of Ravensdale and 15 miles below Cedar Lake, in King County; from 1901 to 1912, gage was a quarter of a mile upstream, at diversion dam of Seattle municipal water supply; from 1914 to 1919 a recording gage 2 miles above original gage and about 5 miles below Taylor Creek was used.

Drainage area, 141 square miles (revised) prior to 1912; 135 square miles thereafter. Areas measured on topographic maps.

Monthly discharge of Cedar River near Ravensdale and Landsberg.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1895.							
July 25-31.....	193	186	190	1.35	0.35	2,640	B.
August.....	184	151	163	1.16	1.34	10,000	B.
September.....	375	151	210	1.49	1.66	12,500	A.
The period.....						25,100	
1895-96.							
October.....	224	128	166	1.18	1.36	10,200	A.
November.....	213	96	141			8,390	A.
December.....	1,990	550	1,060			65,200	A.
January.....	2,900	517	1,170	8.30	9.57	71,900	A.
February.....	2,340	635	1,210	8.58	9.25	69,600	A.
March.....	1,780	501	910	6.45	7.44	56,000	A.
April.....	1,160	517	774	5.49	6.12	46,100	A.
May.....	1,780	825	1,100	7.80	8.99	67,600	A.
June.....	2,200	1,220	1,540	10.9	12.16	91,600	B.
July.....	1,650	292	688	4.88	5.63	42,300	A.
August.....	318	182	236	1.67	1.92	14,500	A.
September.....	184	144	165	1.17	1.30	9,820	A.
The year.....	2,900	96	762	5.40	73.53	553,000	
1896-97.							
October.....	203	137	159	1.13	1.30	9,780	A.
November.....	5,310	604	1,540	10.9	12.16	91,600	B.
December.....	4,680	680	2,200	15.6	17.99	135,000	B.
January.....	2,860	825	1,330	9.43	10.87	81,800	A.
February.....	2,270	825	1,170	8.30	8.64	65,000	A.
March.....	1,220	608	814	5.77	6.65	50,100	A.
April.....	2,790	775	1,500	10.6	11.83	89,300	B.
May.....	1,920	875	1,410	10.0	11.53	86,700	B.
June.....	1,340	725	977	6.93	7.73	58,100	A.
July.....	2,130	473	1,010	7.16	8.26	62,100	A.
August.....	465	315	373	2.65	3.06	22,900	A.
September.....	360	282	318	2.26	2.52	18,900	A.
The year.....	5,310	137	1,060	7.52	102.54	771,000	
1897-98.							
October.....	375	266	308	2.18	2.51	18,900	A.
November.....	4,330	295	1,270	9.01	10.05	75,600	A.
December.....	3,910	554	1,530	10.8	12.45	94,100	B.
January.....	1,990	369	754	5.35	6.17	46,400	A.
February.....	3,560	354	1,300	9.22	9.60	72,200	A.
March.....	680	360	508	3.60	4.15	31,200	A.
April.....	1,220	354	618	4.38	4.89	36,800	A.
May.....	1,220	775	921	6.53	7.53	56,600	A.
June.....	1,040	408	724	5.13	5.72	43,100	A.
July.....	425	153	262	1.86	2.14	16,100	A.
August.....	156	108	124	.879	1.01	7,620	B.
September.....	250	83	127	.901	1.01	7,560	B.
The year.....	4,330	83	700	4.96	67.23	506,000	

Monthly discharge of Cedar River near Ravensdale and Landsberg—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1898-99.							
October.....			306	2.17	2.50	18,800	D.
November.....			762	5.40	6.02	45,300	D.
December.....			1,000	7.09	8.17	61,500	D.
January.....			1,840	13.0	14.99	113,000	D.
February.....			1,590	11.3	11.77	88,300	D.
March.....			566	4.01	4.62	34,800	D.
April.....			888	6.30	7.03	52,800	D.
May.....			1,510	10.7	12.34	92,800	D.
June.....			1,220	8.65	9.65	72,600	D.
July.....			909	6.45	7.44	55,900	D.
August.....			330	2.34	2.70	20,300	D.
September.....			345	2.45	2.73	20,500	D.
The year.....			935	6.63	89.96	677,000	
1899-1900.							
October.....			408	2.89	3.33	25,100	D.
November.....			1,420	10.1	11.27	84,500	D.
December.....			2,330	16.5	19.02	143,000	D.
January.....			1,600	11.3	13.03	98,400	D.
February.....			885	6.28	6.77	50,900	D.
March.....			1,190	8.44	9.73	73,200	D.
April.....			986	6.99	7.80	58,700	D.
May.....			1,190	8.44	9.73	73,200	D.
June.....			663	4.70	5.24	39,500	D.
July.....			453	3.21	3.70	27,900	D.
August.....			228	1.62	1.87	14,000	D.
September.....			251	1.78	1.99	14,900	D.
The year.....			969	6.87	93.48	703,000	
1900-1901.							
October.....			381	2.70	3.11	23,400	D.
November.....			800	5.67	6.33	47,600	D.
December.....			1,410	10.0	11.53	86,700	D.
January.....			964	6.84	7.89	59,300	D.
February.....			1,030	7.30	7.60	57,200	D.
March.....			980	6.95	8.01	60,300	D.
April.....	1,010	623	759	5.38	6.00	45,200	B.
May.....	1,310	680	973	6.90	7.96	59,800	B.
June.....	1,050	680	824	5.84	6.52	49,000	B.
July.....	702	265	439	3.11	3.58	27,000	B.
August.....	260	185	207	1.47	1.70	12,700	C.
September.....	271	175	205	1.45	1.62	12,200	C.
The year.....			746	5.29	71.85	540,000	
1901-2.							
October.....	232	175	197	1.40	1.61	12,100	B.
November.....	2,250	595	1,040	7.38	8.23	61,900	A.
December.....	2,600	532	1,120	7.94	9.15	68,900	A.
January.....	2,250	455	947	6.72	7.75	58,200	A.
February.....	1,180	455	676	4.79	4.99	37,500	A.
March.....	1,050	560	745	5.28	6.09	45,800	A.
April.....	930	518	705	5.00	5.58	42,000	A.
May.....	1,310	755	1,140	8.09	9.33	70,100	A.
June.....	930	560	710	5.04	5.62	42,200	A.
July.....	1,050	325	604	4.28	4.93	37,100	A.
August.....	313	195	245	1.74	2.01	15,100	A.
September.....	525	110	211	1.50	1.67	12,600	B.
The year.....	2,600	110	695	4.93	66.96	504,000	
1902-3.							
October.....	325	139	209	1.48	1.71	12,900	A.
November.....	1,220	283	837	5.94	6.63	49,800	A.
December.....	2,720	630	1,150	8.16	9.41	70,700	A.
January.....	6,020	740	1,790	12.7	14.64	110,000	A.
February.....	815	448	572	4.06	4.23	31,800	A.
March.....	778	396	480	3.40	3.92	29,500	A.
April.....	890	483	653	4.63	5.17	38,900	A.
May.....	1,400	718	1,020	7.23	8.34	62,700	A.
June.....	1,310	688	980	6.95	7.75	58,300	A.
July.....	852	283	533	3.78	4.36	32,800	A.
August.....	277	130	179	1.27	1.46	11,000	A.
September.....	702	156	440	3.12	3.48	26,200	A.
The year.....	6,020	130	739	5.24	71.10	535,000	

Monthly discharge of Cedar River near Ravensdale and Landsberg—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1903-4.							
October.....	1,500	205	657	4.66	5.37	40,400	A.
November.....	1,400	377	780	5.53	6.17	46,400	A.
December.....	1,400	906	1,070	7.59	8.75	65,800	A.
January.....	1,910	429	1,110	7.87	9.07	68,200	A.
February.....	1,010	436	744	5.28	5.70	42,800	A.
March.....	970	422	712	5.05	5.82	43,800	A.
April.....	1,500	623	1,030	7.30	8.14	61,300	A.
May.....	1,180	845	942	6.68	7.70	57,900	A.
June.....	1,090	736	856	6.07	6.77	50,900	A.
July.....	740	248	502	3.56	4.10	30,900	A.
August.....	295	156	183	1.30	1.50	11,300	A.
September.....	243	143	175	1.24	1.38	10,400	A.
The year.....	1,910	143	730	5.18	70.47	530,000	
1904-5.							
October.....	160	126	141	1.00	1.15	8,670	A.
November.....	970	130	359	2.55	2.84	21,400	A.
December.....	1,500	416	831	5.89	6.79	51,100	A.
January.....	1,010	396	647	.....	.....	39,800	B.
February.....	1,010	289	557	.....	.....	30,900	B.
March.....	1,090	442	766	.....	.....	47,100	B.
April.....	890	511	644	.....	.....	38,300	B.
May.....	2,020	429	829	.....	.....	51,000	B.
June.....	1,220	416	679	.....	.....	40,400	B.
July.....	497	283	352	.....	.....	21,600	B.
August.....	277	185	243	.....	.....	14,900	B.
September.....	254	200	221	.....	.....	13,200	B.
The year.....	2,020	126	523	3.71	50.36	378,000	
1905-6.							
October.....	1,260	185	734	.....	.....	45,100	B.
November.....	970	301	499	.....	.....	29,700	B.
December.....	1,090	560	756	.....	.....	46,500	B.
January.....	1,910	595	968	.....	.....	59,500	A.
February.....	1,400	616	992	.....	.....	55,100	A.
March.....	890	497	635	.....	.....	39,000	B.
April.....	852	616	704	.....	.....	41,900	B.
May.....	702	504	566	.....	.....	34,800	B.
June.....	630	497	567	.....	.....	33,700	B.
July.....	560	254	349	.....	.....	21,500	B.
August.....	265	216	238	.....	.....	14,600	B.
September.....	307	210	230	.....	.....	13,700	B.
The year.....	1,910	185	601	4.26	57.83	435,000	
1906-7.							
October.....	1,500	226	712	.....	.....	43,800	B.
November.....	11,400	546	1,930	.....	.....	115,000	A.
December.....	2,360	539	1,040	.....	.....	64,000	A.
January.....	1,050	462	675	.....	.....	41,500	B.
February.....	3,920	830	1,470	.....	.....	81,600	A.
March.....	1,050	455	625	.....	.....	38,400	B.
April.....	1,310	553	828	.....	.....	49,300	B.
May.....	1,050	623	826	.....	.....	50,800	B.
June.....	778	344	486	.....	.....	28,900	B.
July.....	469	243	312	.....	.....	19,200	B.
August.....	313	216	246	.....	.....	15,100	B.
September.....	313	232	258	.....	.....	15,400	B.
The year.....	11,400	216	778	5.52	74.93	563,000	
1907-8.							
October.....	243	210	224	.....	.....	13,800	B.
November.....	2,480	216	637	.....	.....	37,900	B.
December.....	1,600	469	868	.....	.....	53,400	A.
January.....	970	422	680	.....	.....	41,800	B.
February.....	815	371	563	.....	.....	32,400	B.
March.....	4,500	462	1,190	.....	.....	73,200	A.
April.....	1,800	602	979	.....	.....	58,300	B.
May.....	1,090	914	1,010	.....	.....	62,100	B.
June.....	1,260	838	1,020	.....	.....	60,700	B.
July.....	970	295	553	.....	.....	34,000	B.
August.....	384	254	288	.....	.....	17,700	B.
September.....	301	248	269	.....	.....	16,000	B.
The year.....	4,500	210	691	4.90	66.69	501,000	

Monthly discharge of Cedar River near Ravensdale and Landsberg—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1908-9.							
October.....	525	238	297			18,300	B.
November.....	890	289	548			32,600	B.
December.....	1,400	410	634			39,000	B.
January.....	1,800	504	870			53,500	B.
February.....	1,220	483	705			39,200	B.
March.....	778	497	612			37,600	B.
April.....	1,140	511	692			41,200	B.
May.....	1,260	672	933			57,400	B.
June.....	1,600	546	985			58,600	B.
July.....	525	307	429			26,400	B.
August.....	325	271	305			18,700	B.
September.....	338	265	298			17,700	B.
The year.....	1,800	238	608	4.31	58.50	440,000	
1909-10.							
October.....	340	275	303			18,600	B.
November.....	6,360	575	2,060			123,000	B.
December.....	2,970	575	1,120			68,900	B.
January.....	905	451	579			35,600	B.
February.....	1,160	519	695			38,600	B.
March.....	3,110	890	1,550			95,300	A.
April.....	1,620	882	1,090			64,900	A.
May.....	1,420	680	867			53,400	B.
June.....	680	405	501			29,800	B.
July.....	477	247	316			19,400	B.
August.....	263	200	226			13,900	B.
September.....	347	215	265			15,800	B.
The year.....	6,360	200	798	5.66	76.83	577,000	
1910-11.							
October.....	755	334	468			28,800	B.
November.....	3,380	457	1,280			76,200	A.
December.....	1,060	512	792			48,700	B.
January.....	1,240	505	724			44,500	B.
February.....	610	444	527			29,300	B.
March.....	526	405	490			30,100	B.
April.....	717	347	454			27,000	B.
May.....	1,720	717	995			61,200	A.
June.....	1,100	386	689			41,000	B.
July.....	418	253	343			21,100	B.
August.....	347	215	254			15,600	B.
September.....	411	241	293			17,400	B.
The year.....	3,380	215	609	4.32	58.64	441,000	
1911-12.							
October.....	316	215	267			16,400	B.
November.....	13,600	253	1,760			105,000	A.
December.....	1,060	610	800			49,200	B.
January.....	2,380	498	1,090			67,000	A.
February.....	1,720	755	1,100			63,300	A.
March.....	830	373	514			31,600	B.
April.....	645	431	542			32,300	B.
The period.....						365,000	
1914.							
May.....	1,030	556	763			46,900	B.
June.....	704	400	554			33,000	B.
July.....	390	290	340			20,900	A.
August.....	330	266	300			18,400	A.
September.....	348	244	292			17,400	A.
The period.....						137,000	
1914-15.							
October.....	388	186	290			17,800	B.
November.....	1,170	400	660			39,300	A.
December.....	582	376	440			27,100	A.
January.....	780	464	563			34,600	A.
February.....	575	360	504			28,000	A.
March.....	528	390	450			27,700	A.
April.....	1,240	288	510			30,300	A.
May.....	578	256	306			18,800	A.
June.....	456	316	358			21,300	A.
July.....	481	296	366			22,500	A.
August.....	350	233	280			17,200	A.
September.....	401	258	346			20,600	A.
The year.....	1,240	186	422	3.13	42.49	305,000	

Monthly discharge of Cedar River near Ravensdale and Landsberg—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1915-16.							
October.....	550	366	447	.....	.....	27,500	B.
November.....	1,530	455	902	.....	.....	53,700	B.
December.....	2,240	678	1,050	.....	.....	64,600	B.
January.....	774	577	641	.....	.....	39,400	A.
February.....	1,950	572	1,150	.....	.....	66,200	A.
March.....	2,480	670	1,500	.....	.....	92,200	B.
April.....	1,370	960	1,100	.....	.....	65,500	A.
May.....	1,590	853	1,140	.....	.....	70,100	A.
June.....	1,740	1,020	1,250	.....	.....	74,400	A.
July.....	1,760	593	916	.....	.....	56,300	A.
August.....	628	478	560	.....	.....	34,400	A.
September.....	539	412	479	.....	.....	28,500	B.
The year.....	2,480	366	927	6.87	93.51	673,000	
1916-17.							
October.....	455	239	347	.....	.....	21,300	A.
November.....	900	294	510	.....	.....	30,300	A.
December.....	1,120	493	641	.....	.....	39,400	A.
January.....	1,400	518	924	.....	.....	56,800	A.
February.....	2,040	624	1,130	.....	.....	62,800	A.
March.....	764	540	626	.....	.....	38,500	A.
April.....	1,480	597	984	.....	.....	58,600	A.
May.....	1,590	941	1,220	.....	.....	75,000	B.
June.....	2,100	1,460	1,800	.....	.....	107,000	B.
July.....	1,800	482	1,080	.....	.....	66,400	A.
August.....	537	396	469	.....	.....	28,800	A.
September.....	432	331	354	.....	.....	21,100	B.
The year.....	2,100	239	837	6.20	84.16	606,000	
1917-18.							
October.....	.....	266	313	.....	.....	19,200	C.
November.....	486	223	317	.....	.....	18,900	B.
December.....	.....	306	2,760	.....	.....	170,000	C.
January.....	5,020	1,320	2,200	.....	.....	135,000	B.
February.....	1,930	785	1,250	.....	.....	69,400	B.
March.....	1,020	675	792	.....	.....	48,700	A.
April.....	1,400	601	887	.....	.....	52,800	A.
May.....	1,540	442	810	.....	.....	49,800	A.
June.....	900	472	650	.....	.....	38,700	A.
July.....	524	.....	389	.....	.....	23,900	B.
August.....	415	239	304	.....	.....	18,700	B.
September.....	306	229	264	.....	.....	15,700	B.
The year.....	.....	223	912	6.76	91.76	661,000	
1918-19.							
October.....	.....	230	459	.....	.....	28,200	B.
November.....	1,020	510	663	.....	.....	39,500	B.
December.....	1,900	510	1,010	.....	.....	62,100	B.
January.....	2,480	696	1,210	.....	.....	74,400	A.
February.....	1,270	.....	914	.....	.....	50,800	C.
March.....	.....	.....	860	.....	.....	52,900	B.
April.....	968	762	862	.....	.....	51,300	A.
May.....	1,240	835	943	.....	.....	58,000	A.
June.....	1,180	660	817	.....	.....	48,600	A.
July.....	698	.....	568	.....	.....	34,900	A.
August.....	390	250	330	.....	.....	20,300	A.
September.....	338	233	276	.....	.....	16,400	A.
The year.....	2,480	230	742	5.50	74.66	537,000	

NOTE.—Water was shut off at Cedar Lake from Nov. 4 to 26, 1895, while a temporary dam was being built. The observed discharge for this period, as given in table, was less than the natural. The effect of storage accumulation on the monthly mean, as estimated at that time, was 246 second-feet, which would seem to indicate that the natural monthly mean for November, 1895, was 387 second-feet.

Mean discharge for Dec. 13-29, 1895, taken as mean for month; maximum and minimum discharge as shown in table were for that period. Monthly discharge October, 1898, to March, 1901, estimated by comparison with record of White River at Buckley as described and given in Water-Supply Paper 313, pp. 107-108. Flow partly controlled by regulation in Cedar Lake reservoir after Seattle municipal plant was placed in operation, in January, 1905.

Yearly discharge of Cedar River near Ravensdale and Landsberg.

Year ending Sept. 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1896.....	2,900	96	141	Nov.....	762	5.40	73.53	553,000
1897.....	5,310	137	159	Oct.....	1,060	7.52	102.54	771,000
1898.....	4,330	83	124	Aug.....	700	4.96	67.23	506,000
1899.....			306	Oct.....	935	6.63	89.96	677,000
1900.....			228	Aug.....	969	6.87	93.48	703,000
1901.....			205	Sept.....	746	5.29	71.85	540,000
1902.....	2,600	110	197	Oct.....	695	4.93	66.96	504,000
1903.....	6,020	130	179	Aug.....	739	5.24	71.10	535,000
1904.....	1,910	143	175	Sept.....	730	5.18	70.47	530,000
1905.....	2,020	126	141	Oct.....	523	3.71	50.36	378,000
1906.....	1,910	185	230	Sept.....	601	4.26	57.83	435,000
1907.....	11,400	216	246	Aug.....	778	5.52	74.93	563,000
1908.....	4,500	210	224	Oct.....	691	4.90	66.69	501,000
1909.....	1,800	238	297	Oct.....	608	4.31	58.50	440,000
1910.....	6,360	200	226	Aug.....	798	5.66	76.83	577,000
1911.....	3,380	215	254	Aug.....	609	4.32	58.64	441,000
1915.....	1,240	186	280	Aug.....	422	3.13	42.49	305,000
1916.....	2,480	366	447	Oct.....	927	6.87	93.51	673,000
1917.....	2,100	239	347	Oct.....	837	6.20	84.16	606,000
1918.....		223	264	Sept.....	912	6.76	91.76	661,000
1919.....	2,480	230	276	Sept.....	742	5.50	74.66	537,000
The period.....			124	Aug., 1898	752	5.39	73.21	545,000

CEDAR RIVER AT RENTON (27).

Staff gage at county highway bridge at Renton, in King County.

Flow controlled by regulation at Cedar Lake reservoir to accommodate requirements of Seattle municipal power plant, placed in operation in January, 1905.

Drainage area, 196 square miles (revised); measured on topographic maps and Plate XI, Water-Supply Paper 313.

Monthly discharge of Cedar River at Renton.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1901.							
March.....	1,400	890	1,050	5.36	6.18	45,800	A.
April.....	1,260	636	944	4.82	5.38	56,200	A.
May.....	1,480	714	1,010	5.15	5.94	62,100	A.
June.....	1,100	773	900	4.59	5.12	53,600	A.
July.....	760	295	504	2.57	2.96	31,000	A.
August.....	286	158	205	1.05	1.21	12,600	A.
September.....	276	121	173	.883	.99	10,300	A.
The period.....						272,000	
1901-2.							
October.....	535	115	161	.821	.95	9,900	A.
November.....	2,770	572	1,170	5.97	6.66	69,600	A.
December.....	2,940	676	1,280	6.53	7.53	78,700	A.
January.....	2,770	792	1,320	6.73	7.76	81,200	A.
February.....	1,480	494	942	4.81	5.01	52,300	A.
March.....	1,180	773	948	4.84	5.58	58,300	A.
April.....	1,030	734	845	4.31	4.81	50,300	A.
September.....	395	114	179	.913	1.02	10,700	A.

Monthly discharge of Cedar River at Renton—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Aere-feet.	
1902-3.							
October.....	275	134	195	0.995	1.15	12,000	A.
November.....	810	280	567	2.89	3.22	33,700	A.
May 14-31.....	1,530	990	1,190	6.07	4.06	42,500	A.
June.....	1,460	870	1,100	5.61	6.26	65,500	A.
July 1-15.....	990	708	849	4.33	2.42	25,300	A.
1906.							
September.....	370	213	250	.....	.....	14,900	A.
1906-7.							
October.....	1,380	165	608	.....	.....	37,400	A.
November.....	5,650	675	1,740	.....	.....	104,000	B.
December.....	2,840	635	1,130	.....	.....	69,500	A.
January.....	1,610	655	1,080	.....	.....	66,400	A.
February.....	4,890	1,450	2,250	.....	.....	125,000	A.
March.....	1,690	860	1,100	.....	.....	67,600	A.
April.....	1,930	860	1,280	.....	.....	76,200	A.
May.....	1,380	1,000	1,160	.....	.....	71,300	A.
June.....	1,080	465	705	.....	.....	42,000	A.
July.....	525	300	369	.....	.....	22,700	A.
August.....	355	205	256	.....	.....	15,700	A.
September.....	355	250	281	.....	.....	16,700	A.
The year.....	5,650	165	987	5.04	63.41	714,000	
1907.							
October.....	300	205	234	.....	.....	14,400	A.
November.....	3,010	250	771	.....	.....	45,900	A.
December.....	2,840	1,150	1,620	.....	.....	99,600	B.
The period.....	.....	.....	.....	.....	.....	160,000	

NOTE.—Flow regulated by storage and release of water at Cedar Lake reservoir after Seattle municipal power plant was placed in operation in January, 1905.

SNOHOMISH RIVER BASIN.

SOUTH FORK OF SKYKOMISH RIVER NEAR INDEX (28).

Staff gage 300 feet above Sunset Falls, 2 miles southeast of Index and mouth of North Fork, in Snohomish County.

Drainage area, 351 square miles; measured on topographic and county maps.

Monthly discharge of South Fork of Skykomish River near Index.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1902-3.							
October.....	1,800	457	697	1.99	2.29	42,900	A.
November.....	3,530	1,310	2,090	5.95	6.64	124,000	A.
December.....	11,100	888	2,530	7.21	8.31	156,000	A.
January.....	26,000	1,410	3,880	11.1	12.80	239,000	A.
February.....	2,010	846	1,070	3.05	3.18	59,400	A.
March.....	2,920	806	1,280	3.65	4.21	78,700	A.
April.....	3,260	1,110	1,830	5.21	5.81	109,000	A.
May.....	8,380	2,150	3,800	10.8	12.45	234,000	A.
June.....	9,660	3,620	6,260	17.8	19.86	372,000	A.
July.....	4,610	1,410	2,690	7.66	8.83	165,000	A.
August.....	1,410	766	1,000	2.85	3.29	61,500	A.
September.....	3,260	618	1,600	4.56	5.09	95,200	A.
The year.....	26,000	457	2,400	6.84	92.76	1,740,000	

Monthly discharge of South Fork of Skykomish River near Index—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1903-4.							
October.....	7,560	930	2,420	6.89	7.94	149,000	A.
November.....	9,850	1,060	2,570	7.32	8.17	153,000	A.
December.....	10,200	1,060	2,550	7.26	8.37	157,000	A.
January.....	9,470	930	2,340	6.67	7.69	144,000	A.
February.....	1,460	766	1,000	2.85	3.07	57,500	A.
March.....	4,720	806	1,510	4.30	4.96	92,800	A.
April.....	7,720	1,020	3,710	10.6	11.83	221,000	A.
May.....	5,400	2,150	3,540	10.1	11.64	218,000	A.
June.....	5,880	2,680	4,090	11.7	13.05	243,000	A.
July.....	4,400	1,110	2,380	6.78	7.82	146,000	A.
August.....	1,210	550	790	2.25	2.59	48,600	A.
September.....	888	403	527	1.50	1.67	31,400	A.
The year.....	10,200	403	2,290	6.52	88.80	1,660,000	
1904-5.							
October.....	816	356	546	1.56	1.80	33,600	A.
November.....	9,470	518	2,590	7.38	8.23	154,000	A.
December.....	6,960	1,020	2,510	7.15	8.24	154,000	A.
January.....	3,620	888	1,570	4.47	5.15	96,500	A.
February.....	5,160	618	1,440	4.10	4.27	80,000	A.
March.....	4,610	1,410	2,690	7.66	8.83	165,000	A.
April.....	4,000	1,260	2,080	5.93	6.62	124,000	A.
May.....	4,500	1,410	2,380	6.78	7.82	146,000	A.
June.....	5,640	1,560	2,760	7.86	8.77	164,000	A.
July.....	1,680	806	1,100	3.13	3.61	67,600	A.
August.....	2,360	550	811	2.31	2.66	49,900	A.
September.....	3,900	518	1,040	2.96	3.30	61,900	A.
The year.....	9,470	356	1,790	5.10	69.30	1,300,000	
1911.							
April 26-30.....	2,920	2,290	2,550	7.26	1.35	25,300	A.
May.....	6,400	2,520	3,550	10.1	11.64	218,000	A.
June.....	7,410	2,440	4,010	11.4	12.72	239,000	A.
July.....	3,080	930	1,940	5.53	6.38	119,000	A.
August.....	888	487	642	1.83	2.11	39,500	A.
September.....	4,500	487	1,250	3.56	3.97	74,400	A.
The period.....						715,000	
1911-12.							
October.....	1,260	429	593	1.69	1.95	36,500	A.
November.....	24,800	403	4,700	13.4	14.95	280,000	A.
December.....	4,000	974	2,070	5.90	6.80	127,000	A.
January.....	7,880	690	2,890	8.23	9.49	178,000	A.
February.....	4,940	930	2,340	6.67	7.19	135,000	A.
March.....	1,620	690	926	2.64	3.04	56,900	A.
April.....	2,760	1,310	1,800	5.13	5.72	107,000	A.
May.....	7,880	1,740	4,560	13.0	14.99	280,000	A.
June.....	6,270	2,150	4,370	12.5	13.95	260,000	A.
July.....	2,920	974	1,810	5.16	5.95	111,000	A.
August.....	1,510	313	853	2.43	2.80	52,400	A.
September.....	3,900	690	1,340	3.82	4.26	79,700	A.
The year.....	24,800	313	2,350	6.70	91.09	1,700,000	
1912-13.							
October.....			1,100	3.13	3.61	67,600	D.
November.....			2,800	7.98	8.90	167,000	D.
December.....			1,700	4.84	5.58	105,000	D.
January.....			1,700	4.84	5.58	105,000	D.
February.....			1,600	4.56	4.75	88,900	D.
March.....			1,600	4.56	5.26	98,400	D.
April.....			2,700	7.69	8.58	161,000	D.
May.....			4,900	14.0	16.14	301,000	D.
June.....			6,730	19.2	21.42	400,000	C.
July.....	6,140	2,220	4,280	12.2	14.07	263,000	A.
August.....	2,360	846	1,310	3.73	4.30	80,600	A.
September.....	7,110	728	1,400	3.99	4.45	83,300	A.
The year.....			2,650	7.55	102.64	1,920,000	

Monthly discharge of South Fork of Skykomish River near Index—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1913-14.							
October.....	12,400	690	2,410	6.87	7.92	148,000	A.
November.....	11,300	1,110	2,950	8.40	9.37	176,000	A.
December.....	2,760	728	1,270	3.62	4.17	78,100	A.
January.....	24,800	806	3,310	9.43	10.87	204,000	A.
February.....	5,090	812	1,520	4.33	4.51	84,400	A.
March.....	5,090	1,300	2,660	7.58	8.74	164,000	A.
April.....	7,580	1,520	3,540	10.1	11.27	211,000	A.
May.....	6,670	2,700	4,330	12.3	14.18	266,000	A.
June.....	4,870	2,030	3,080	8.77	9.78	183,000	A.
July.....	2,620	.....	1,400	3.99	4.60	86,100	D.
August.....	.....	.....	500	1.42	1.64	30,700	D.
September.....	3,120	.....	934	2.66	2.97	55,600	C.
The year.....	24,800	.....	2,330	6.64	90.02	1,690,000	
1914-15.							
October.....	5,360	622	1,800	5.13	5.91	111,000	A.
November.....	11,400	1,870	4,200	12.0	13.39	250,000	A.
December.....	1,950	556	919	2.62	3.02	56,500	A.
January.....	1,180	524	749	2.13	2.46	46,100	A.
February.....	918	692	780	2.22	2.31	43,300	A.
March.....	4,300	692	1,720	4.90	5.65	106,000	A.
April.....	10,700	1,520	3,260	9.29	10.36	194,000	A.
May.....	3,940	1,230	1,740	4.96	5.72	107,000	A.
June.....	1,730	764	1,050	2.99	3.34	62,500	A.
July.....	878	492	657	1.87	2.16	40,400	A.
August.....	524	360	421	1.20	1.38	25,900	A.
September.....	492	264	334	.952	1.06	19,900	A.
The year.....	11,400	264	1,470	4.19	56.76	1,060,000	
1915-16.							
October.....	13,500	374	2,060	5.87	6.77	127,000	A.
November.....	7,020	1,040	2,280	6.50	7.25	136,000	A.
December.....	7,380	1,000	2,390	6.81	7.85	147,000	A.
January.....	3,500	524	941	2.68	3.09	57,900	A.
February.....	9,040	622	2,590	7.38	7.96	149,000	A.
March.....	9,220	1,180	3,400	9.69	11.17	209,000	A.
April.....	5,950	2,110	3,150	8.97	10.01	187,000	A.
May.....	7,180	2,540	4,200	12.0	13.83	253,000	A.
June.....	12,100	3,200	6,300	17.9	19.97	375,000	A.
July.....	8,340	2,370	4,510	12.8	14.76	277,000	A.
August.....	2,460	918	1,500	4.27	4.92	92,200	A.
September.....	1,280	402	793	2.26	2.52	47,200	A.
The year.....	13,500	374	2,840	8.09	110.10	2,060,000	
1916-17.							
October.....	1,570	332	464	1.32	1.52	28,500	A.
November.....	10,800	732	1,900	5.41	6.04	113,000	A.
December.....	1,860	550	960	2.74	3.16	59,000	A.
January.....	4,360	620	1,300	3.70	4.27	79,900	A.
February.....	4,360	732	2,020	5.75	5.99	112,000	A.
March.....	1,440	620	898	2.56	2.95	55,200	A.
April.....	3,800	894	2,280	6.50	7.25	136,000	A.
May.....	8,300	2,100	4,510	12.8	14.76	277,000	A.
June.....	12,800	4,130	7,460	21.3	23.76	444,000	A.
July.....	9,420	2,530	6,020	17.2	19.83	370,000	A.
August.....	2,440	787	1,460	4.16	4.80	89,800	A.
September.....	1,210	488	680	1.94	2.16	40,500	A.
The year.....	12,800	332	2,490	7.09	96.49	1,800,000	
1917-18.							
October.....	1,110	432	615	1.75	2.02	37,800	A.
November.....	2,180	550	1,030	2.93	3.27	61,300	A.
December.....	40,300	1,070	11,000	31.3	36.09	676,000	A.
January.....	18,100	1,780	5,060	14.4	16.60	311,000	A.
February.....	4,440	920	2,090	5.95	6.20	116,000	A.
March.....	5,120	730	1,770	5.04	5.81	109,000	A.
April.....	4,980	1,500	2,830	8.06	8.99	168,000	A.
May.....	7,320	2,100	3,630	10.3	11.87	223,000	A.
June.....	8,040	2,460	4,750	13.5	15.06	283,000	A.
July.....	2,640	920	1,610	4.59	5.29	99,000	A.
August.....	1,940	640	980	2.79	3.22	60,300	A.
September.....	600	346	446	1.27	1.42	26,500	A.
The year.....	40,300	346	3,000	8.55	115.84	2,170,000	

Monthly discharge of South Fork of Skykomish River near Index—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1918-19.							
October.....	14,000	387	2,130	6.07	7.00	131,000	A.
November.....	3,820	1,070	2,040	5.81	6.48	121,000	A.
December.....	23,300	1,250	5,110	14.6	16.83	314,000	A.
January.....	18,000	775	3,840	10.9	12.57	236,000	A.
February.....	1,840	920	1,320	3.76	3.92	73,300	A.
March.....	3,610	820	1,560	4.44	5.12	95,900	A.
April.....	5,090	1,920	3,350	9.54	10.64	199,000	A.
May.....	12,400	2,510	4,750	13.5	15.56	292,000	A.
June.....	5,810	2,880	4,120	11.7	13.05	245,000	A.
July.....	4,190	1,250	2,680	7.64	8.81	165,000	A.
August.....	1,250	560	882	2.51	2.89	54,200	A.
September.....	1,130	359	580	1.65	1.84	34,500	A.
The year.....	23,300	359	2,710	7.72	104.71	1,960,000	

NOTE.—Maximum discharge, about 47,000 second-feet at 9 a. m. Dec. 18, 1917; minimum discharge, 262 second-feet Sept. 30, 1915. Monthly mean discharge October, 1912, to May, 1913, estimated by comparison with record of Snoqualmie River near Snoqualmie by months for a period of seven years. Discharge June 1-6 and 8-13, 1913, July 9-31, August 1-31, and Sept. 1-14, 1914, estimated by similar comparison.

Yearly discharge of South Fork of Skykomish River near Index.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maxi- mum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
		Mean.	Month.					
1903.....	26,000	457	697	Oct.....	2,400	6.84	92.76	1,740,000
1904.....	10,200	403	527	Sept.....	2,290	6.52	88.80	1,660,000
1905.....	9,470	356	546	Oct.....	1,790	5.10	69.30	1,300,000
1912.....	24,800	313	593	Oct.....	2,350	6.70	91.09	1,700,000
1913.....	.....	.....	1,100	Oct.....	2,650	7.55	102.64	1,920,000
1914.....	24,800	.....	500	Aug.....	2,330	6.64	90.02	1,690,000
1915.....	11,400	264	334	Sept.....	1,470	4.19	56.76	1,060,000
1916.....	13,500	374	793	Sept.....	2,840	8.09	110.10	2,060,000
1917.....	12,800	332	464	Oct.....	2,490	7.09	96.49	1,800,000
1918.....	40,300	346	446	Sept.....	3,000	8.55	115.84	2,170,000
1919.....	23,300	359	580	Sept.....	2,710	7.72	104.71	1,960,000
The period.	40,300	264	334	Sept., 1915	2,390	6.82	92.59	1,730,000

SKYKOMISH RIVER AT SULTAN (29).

Staff gage at county highway bridge at Sultan, one-fourth mile above Sultan River, in Snohomish County.

Monthly discharge of Skykomish River at Sultan.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1910-11.					
October.....	19,300	1,870	6,010	370,000	B.
November.....	19,600	2,620	7,220	430,000	B.
December.....	13,200	1,980	4,350	267,000	A.
January.....	7,600	1,360	2,920	180,000	A.
February.....	2,350	970	1,240	68,900	A.
March.....	5,320	900	2,500	154,000	A.
April.....	6,820	1,870	3,150	187,000	A.
May.....	8,940	4,090	5,780	355,000	B.
June.....	11,100	3,450	6,420	382,000	B.
July.....	4,930	1,530	3,160	194,000	A.
August.....	1,530	900	1,170	71,900	A.
September.....	7,860	970	2,190	130,000	A.
The year.....	19,600	900	3,850	2,790,000	

FOSS RIVER NEAR SKYKOMISH (30).

Staff gage half a mile below Great Northern Railway crossing, three-fourths of a mile above mouth of river, and 3 miles east of Skykomish, in King County.

Drainage area, 55 square miles; measured on topographic maps.

Monthly discharge of Foss River near Skykomish.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
May 20-31.....	424	390	398	9,470	B.
June.....	460	325	392	23,300	B.
July.....	660	295	399	24,500	B.
August.....	295	194	233	14,300	B.
September.....	620	156	270	16,100	B.
October.....	174	94	125	7,690	B.
November.....	2,620	83	556	33,100	B.
December.....	424	138	238	14,600	B.
The period.....				143,000	

MILLER CREEK NEAR MILLER RIVER (31).⁴

Staff gage $1\frac{1}{4}$ miles south of Miller River and mouth of creek, in King County.

Drainage area, 44.2 square miles; measured on topographic map.

Monthly discharge of Miller Creek near Miller River.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911.							
May 24-31.....	1,390	440	776	17.6	5.24	12,300	A.
June.....	2,220	390	787	17.8	19.86	46,800	A.
July.....	730	98	348	7.87	9.07	21,400	A.
August.....	112	31	55.3	1.25	1.44	3,400	A.
September.....	1,500	31	289	6.54	7.30	17,200	A.
The period.....						101,000	
1911-12.							
October.....	320	40	87.0	1.97	2.27	5,350	B.
November.....	4,740	40	1,190	26.9	30.01	70,800	C.
December.....	730	51	279	6.31	7.28	17,200	B.
January.....	1,620	95	373	8.44	9.73	22,900	A.
February.....	1,190	112	339	7.67	8.27	19,500	A.
March.....	225	64	109	2.47	2.85	6,700	A.
April.....	465	172	261	5.90	6.58	15,500	A.
May.....	1,390	256	822	18.6	21.44	50,500	A.
June.....	910	367	596	13.5	15.06	35,500	A.
July.....	390	98	237	5.36	6.18	14,600	A.
August.....	690	51	137	3.10	3.57	8,420	A.
September.....	308	37	116	2.62	2.92	6,900	A.
The year.....	4,740	37	378	8.55	116.16	274,000	
1912-13.							
October.....	385	80	183	4.14	4.77	11,300	A.
November.....	810	143	349	7.90	8.81	20,800	B.
December.....	483	126	238	5.38	6.20	14,600	B.
January.....			220	4.98	5.74	13,500	D.
February.....		77	353	7.99	8.32	19,600	C.
March.....			210	4.75	5.48	12,900	D.
April.....	900		434	9.82	10.96	25,800	C.
May.....	1,320	239	702	15.9	18.33	43,200	A.
June.....	1,950	640	1,090	24.7	27.56	64,900	B.
July.....	900	323	627	14.2	16.37	38,600	A.
August.....	363	77	170	3.85	4.44	10,500	A.
September.....	456	70	175	3.96	4.42	10,400	A.
The year.....		70	395	8.94	121.40	286,000	

⁴ Formerly designated Miller Creek near Berlin.

Monthly discharge of Miller Creek near Miller River.—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1913-14.							
October.....	3,030	92	404	9.14	10.54	24,800	B.
November.....			433	9.80	10.93	25,800	D.
December.....		64	157	3.55	4.09	9,650	B.
January.....	2,750	70	396	8.96	10.33	24,300	C.
February.....	810	70	165	3.73	3.88	9,160	A.
March.....	1,000	160	392	8.87	10.23	24,100	B.
April.....			540	12.2	13.61	32,100	C.
May.....			640	14.5	16.72	39,400	C.
June.....	900	224	455	10.3	11.49	27,100	B.
July.....	510		210	4.75	5.48	12,900	D.
August.....			65	1.47	1.70	4,000	D.
September.....			120	2.71	3.02	7,140	D.
The year.....	3,030		332	7.51	102.02	240,000	
1914-15.							
October.....			333	7.53	8.68	20,500	B.
November.....	1,590		581	13.1	14.62	34,600	B.
December.....	200	64	99.1	2.24	2.58	6,090	B.
January.....	186	52	83.1	1.88	2.17	5,110	A.
February.....	141	76	96.0	2.17	2.26	5,330	A.
March.....	1,000	90	296	6.70	7.72	18,200	A.
April.....		200	449	10.2	11.38	26,700	A.
May.....	798	153	312	7.06	8.14	19,200	A.
June.....	278	98	158	3.57	3.98	9,400	A.
July.....	200	47	89.0	2.01	2.32	5,470	B.
August.....	43	24	32.6	.738	.85	2,000	B.
September.....	80	25	34.3	.776	.87	2,040	B.
The year.....	1,590	24	214	4.84	65.57	155,000	
1915-16.							
October.....	4,220	63	531	12.0	13.83	32,600	A.
November.....	760	116	262	5.93	6.62	15,600	A.
December.....	1,180	110	300	6.79	7.83	18,400	B.
January.....	958	44	154	3.48	4.01	9,470	B.
February.....	1,040	118	452	10.2	11.00	26,000	B.
March.....	1,700	124	506	11.5	13.26	31,100	B.
April.....	1,000	260	494	11.2	12.50	29,400	B.
May.....	1,000	295	569	12.9	14.87	35,000	B.
June.....	1,700	510	876	19.8	22.09	52,100	A.
July.....	1,700	330	660	14.9	17.18	40,600	B.
August.....	350	137	236	5.34	6.16	14,500	A.
September.....	330	53	126	2.85	3.18	7,500	A.
The year.....	4,220	44	430	9.73	132.53	312,000	
1916-17.							
October.....	330	33	64.2	1.45	1.67	3,950	A.
November.....		79	276	6.24	6.96	16,400	B.
December.....	215	59	136	3.08	3.55	8,360	B.
January.....		63	169	3.82	4.40	10,400	B.
February.....			308	6.97	7.26	17,100	B.
March.....			108	2.44	2.81	6,640	B.
April.....			326	7.38	8.23	19,400	B.
May.....			675	15.3	17.64	41,500	B.
June.....			1,050	23.8	26.55	62,500	B.
July.....		438	865	19.6	22.60	53,200	B.
August.....	415	91	220	4.98	5.74	13,500	B.
September.....			79.1	1.79	2.00	4,710	B.
The year.....		33	356	8.05	109.41	258,000	
1917-18.							
October.....			100	2.26	2.61	6,150	D.
November.....			160	3.62	4.04	9,520	D.
December.....			1,500	33.9	39.08	92,200	D.
January.....			660	14.9	17.18	40,600	D.
February.....			272	6.15	6.40	15,100	C.
March.....			130	2.94	3.39	7,990	C.
April.....			400	9.05	10.10	23,800	D.
May.....			550	12.4	14.30	33,800	D.
June.....	1,050		641	14.5	16.18	38,100	C.
July.....			240	5.43	6.26	14,800	D.
August.....	441	62	147	3.33	3.84	9,040	C.
September.....	56		35.9	.812	.91	2,140	C.
The year.....			405	9.16	124.29	293,000	

Monthly discharge of Miller Creek near Miller River—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1918-19.							
October.....	4,000	30	508	11.5	13.26	31,200	C.
November.....	910	195	345	7.81	8.71	20,500	C.
December.....	4,160	150	945	21.4	24.67	58,100	C.
January.....	1,640	119	461	10.4	11.99	28,300	C.
February.....	320	100	225	5.09	5.30	12,500	C.
March.....	254	150	182	4.12	4.75	11,200	C.
April.....	742	161	472	10.7	11.94	28,100	C.
May.....	1,570	377	589	13.3	15.33	36,200	C.
June.....	742	348	567	12.8	14.28	33,700	C.
July.....	.....	.....	400	9.05	10.43	24,600	D.
August.....	.....	.....	110	2.49	2.87	6,760	D.
September.....	.....	.....	75	1.70	1.90	4,460	D.
The period.....	4,160	.....	408	9.23	125.43	296,000	

Yearly discharge of Miller Creek near Miller River.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1912.....	4,740	37	87.0	Oct.....	378	8.55	116.16	274,000
1913.....	.....	70	170	Aug.....	395	8.94	121.40	286,000
1914.....	3,030	.....	65.0	Aug.....	332	7.51	102.02	240,000
1915.....	1,590	24	32.6	Aug.....	214	4.84	65.57	155,000
1916.....	4,220	44	126	Sept.....	430	9.73	132.53	312,000
1917.....	.....	33	64.2	Oct.....	356	8.05	109.41	258,000
1918.....	.....	.....	35.9	Sept.....	405	9.16	124.29	293,000
1919.....	4,160	.....	75	Sept.....	408	9.23	125.43	296,000
The period.....	.....	24	32.6	Aug., 1915.	365	8.25	112.10	264,000

NOTE.—Maximum discharge during period of record on Dec. 18, 1917 (discharge not estimated); minimum discharge, 24 second-feet Aug. 31, 1915. Mean discharge for February and April, 1913, February, March, June, August, and September, 1918, obtained by completing the fragmentary record of daily discharge by interpolation and comparison with record of South Fork of Skykomish River. Mean discharge for January and March, 1913, July, August, and September, 1914, October, 1917, to January, 1918, April, May, and July, 1918, and July to September, 1919, estimated by percentage comparison with record of South Fork of Skykomish River, using for each month the average percentage for that month obtained from records extending over 8 years.

NORTH FORK OF SKYKOMISH RIVER AT INDEX (32).

Staff gage one-third mile above highway bridge at Index and $1\frac{3}{4}$ miles above mouth of river in Snohomish County.

Drainage area, 143 square miles; measured on topographic and county maps.

North Fork of Skykomish River at Index.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910-11.							
October.....			1,500	10.5	12.11	92,200	D.
November.....	9,160	600	2,030	14.2	15.84	121,000	C.
December.....	2,240	550	1,020	7.13	8.22	62,700	B.
January.....	2,040	270	617	4.31	4.97	37,900	A.
February.....	375	182	223	1.56	1.62	12,400	A.
March.....	1,570	182	664	4.64	5.35	40,800	A.
April.....	1,840	550	929	6.50	7.25	55,300	A.
May.....	3,620	1,300	1,750	12.2	14.07	108,000	B.
June.....	3,620	1,220	2,000	14.0	15.62	119,000	B.
July.....	1,570	490	1,060	7.41	8.54	65,200	B.
August.....	490	182	288	2.01	2.32	17,700	A.
September.....	2,040	110	617	4.31	4.81	36,700	A.
The year.....	9,160	110	1,060	7.41	100.72	769,000	
1911-12.							
October.....	830	144	276	1.93	2.22	17,000	A.
November.....	9,720	144	2,360	16.5	18.41	140,000	A.
December.....	1,740	404	891	6.23	7.18	54,800	B.
January.....	3,000	293	1,030	7.20	8.30	63,300	B.
February.....	2,110	445	1,030	7.20	7.76	59,200	B.
March.....	775	260	376	2.63	3.03	23,100	B.
April.....	1,270	577	820	5.73	6.39	48,800	B.
May.....	3,780	885	2,060	14.4	16.60	127,000	B.
June.....	3,780	1,060	2,270	15.9	17.74	135,000	B.
July.....	1,740	445	994	6.95	8.01	61,100	B.
August.....	885	197	392	2.74	3.16	24,100	B.
September.....	1,200	156	385	2.69	3.00	22,900	B.
The year.....	9,720	144	1,070	7.48	101.80	776,000	
1912-13.							
October.....	1,130	244	541	3.78	4.36	33,300	B.
November.....			1,550	10.8	12.05	92,200	D.
December.....			850	5.94	6.85	52,300	D.
January.....			750	5.24	6.04	46,100	D.
February.....			650	4.55	4.74	36,100	D.
March.....			700	4.90	5.65	43,000	D.
April.....	2,330	546	1,280	8.95	9.99	76,200	A.
May.....	3,550	692	2,120	14.8	17.06	130,000	A.
June.....	5,380	2,120	2,990	20.9	23.32	178,000	A.
July.....	3,280	1,020	2,080	14.5	16.72	128,000	A.
August.....	1,240	368	645	4.51	5.20	39,700	A.
September.....	5,060	276	766	5.36	5.98	45,600	A.
The year.....			1,240	8.67	117.96	900,000	
1913-14.							
October.....	8,200	276	1,240	8.67	10.00	76,200	A.
November.....	5,720	454	1,370	9.58	10.69	81,500	A.
December.....	1,020	311	541	3.78	4.36	33,300	A.
January.....	9,820	293	1,460	10.2	11.76	89,800	A.
February.....	2,780	311	666	4.66	4.85	37,000	A.
March.....	2,550	594	1,330	9.30	10.72	81,800	A.
April.....	3,690	546	1,630	11.4	12.72	97,000	A.
May.....	3,020	904	2,050	14.3	16.49	126,000	A.
June.....	2,660	963	1,640	11.5	12.83	97,600	A.
July.....	1,730	348	802	5.61	6.47	49,300	A.
August.....	368	198	272	1.90	2.19	16,700	A.
September.....	2,020	144	679	4.75	5.30	40,400	A.
The year.....	9,820	144	1,140	7.97	108.38	827,000	
1914-15.							
October.....	2,120	368	928	6.49	7.48	57,100	A.
November.....	6,060	742	2,030	14.2	15.84	121,000	A.
December.....	848	227	394	2.76	3.18	24,200	A.
January.....	570	227	342	2.39	2.76	21,000	A.
February.....	500	293	372	2.60	2.71	20,700	A.
March.....	2,330	293	874	6.11	7.04	53,700	A.
April.....	6,400	848	1,660	11.6	12.94	98,800	A.
May.....	2,020	642	872	6.10	7.03	53,600	A.
June.....	848	368	540	3.78	4.22	32,100	A.
July.....	523	227	320	2.24	2.58	19,700	A.
August.....	198	137	168	1.17	1.35	10,300	A.
September.....	1,090	97	163	1.14	1.27	9,700	A.
The year.....	6,400	97	720	5.03	68.40	522,000	

North Fork of Skykomish River at Index—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1915-16.							
October.....	6,400	198	1,000	6.99	8.06	61,500	A.
November.....	3,150	523	1,050	7.34	8.19	62,500	A.
December.....	2,900	212	994	6.95	8.01	61,100	A.
January.....	1,240	227	456	3.19	3.68	28,000	A.
February.....	4,270	293	1,260	8.81	9.50	72,500	A.
March.....	4,120	546	1,370	9.58	11.04	84,200	A.
April.....	2,550	642	1,220	8.53	9.52	72,600	A.
May.....	3,150	1,020	1,760	12.3	14.18	108,000	A.
June.....	5,550	1,550	2,820	19.7	21.98	168,000	A.
July.....	3,410	1,090	2,190	15.3	17.64	135,000	A.
August.....	1,310	523	796	5.57	6.42	48,900	A.
September.....	1,640	293	572	4.00	4.46	34,000	A.
The year.....	6,400	198	1,290	9.02	122.68	936,000	
1916-17.							
October.....	1,090	130	246	1.72	1.98	15,100	A.
November.....	7,660	460	1,060	7.41	8.27	63,100	A.
December.....	829	247	428	2.99	3.45	26,300	A.
January.....	1,970	247	624	4.36	5.03	38,400	A.
February.....	1,970	354	855	5.98	6.23	47,500	A.
March.....	529	280	375	2.62	3.02	23,100	A.
April.....	1,600	374	912	6.38	7.12	54,300	A.
May.....	3,920	885	2,060	14.4	16.60	127,000	A.
June.....	5,490	1,780	3,500	24.5	27.33	208,000	A.
July.....	4,220	1,140	2,770	19.4	22.37	170,000	A.
August.....	1,360	438	820	5.73	6.61	50,400	A.
September.....	673	232	358	2.50	2.79	21,300	B.
The year.....	7,660	130	1,170	8.18	110.80	844,000	
1917-18.							
October.....	829	187	327	2.29	2.64	20,100	A.
November.....	1,440	280	641	4.48	5.00	38,100	A.
December.....	16,600	506	4,450	31.1	35.85	274,000	B.
January.....	.....	674	1,950	13.6	15.68	120,000	C.
February.....	1,940	354	841	5.88	6.12	46,700	A.
March.....	2,490	249	713	4.99	5.75	43,800	A.
April.....	2,980	714	1,470	10.3	11.49	87,500	A.
May.....	3,690	1,070	1,750	12.2	14.07	108,000	A.
June.....	5,050	1,270	2,520	17.6	19.64	150,000	A.
July.....	1,220	425	872	6.10	7.03	53,600	A.
August.....	1,370	320	621	4.34	5.00	38,200	A.
September.....	309	143	214	1.50	1.67	12,700	A.
The year.....	16,600	143	1,370	9.58	129.94	993,000	
1918-19.							
October.....	7,620	159	1,170	8.18	9.43	71,900	A.
November.....	2,070	490	959	6.71	7.49	57,100	A.
December.....	8,770	490	2,020	14.1	16.26	124,000	A.
January.....	5,880	299	1,420	9.93	11.45	87,300	A.
February.....	884	395	593	4.15	4.32	32,900	A.
March.....	1,700	413	650	4.55	5.25	40,000	A.
April.....	3,150	884	1,750	12.2	13.61	104,000	A.
May.....	6,960	1,170	2,550	17.8	20.52	157,000	A.
June.....	3,690	1,590	2,330	16.3	18.19	139,000	A.
July.....	3,510	714	1,760	12.3	14.18	108,000	A.
August.....	635	213	426	2.98	3.44	26,200	B.
September.....	1,370	115	303	2.12	2.36	18,000	A.
The year.....	8,770	115	1,330	9.30	126.50	965,000	

NOTE.—Maximum discharge during period of record, 17,000 second-feet at 5 a. m. Dec. 29, 1917; minimum discharge, 97 second-feet at 1 p. m. Sept. 29, 1915. Mean discharge October, 1910, estimated by comparison with record of North Fork of Snoqualmie River near North Bend. Monthly mean discharge November, 1912, to March, 1913, estimated by comparison with records of North Fork of Snoqualmie River near North Bend and Sultan River near Sultan.

Yearly discharge of North Fork of Skykomish River at Index.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1911.....	9,160	110	223	Feb.....	1,060	7.41	100.72	769,000
1912.....	9,720	144	276	Oct.....	1,070	7.48	101.80	776,000
1913.....			541	Oct.....	1,240	8.67	117.96	900,000
1914.....	9,820	144	272	Aug.....	1,140	7.97	108.38	827,000
1915.....	6,400	97	163	Sept.....	720	5.03	68.40	522,000
1916.....	6,400	198	456	Jan.....	1,290	9.02	122.68	936,000
1917.....	7,660	130	246	Oct.....	1,170	8.18	110.80	844,000
1918.....	16,600	143	214	Sept.....	1,370	9.58	129.94	993,000
1919.....	8,770	115	303	Sept.....	1,330	9.30	126.50	965,000
The period.	16,600	97	163	Sept., 1915.	1,150	8.07	109.69	837,000

SULTAN RIVER NEAR SULTAN (33).

Water-stage recorder (Pl. III, A) prior to October 29, 1915, at Camp Habecker, 1½ miles above Horseshoe Bend, 6 miles north of Sultan and mouth of Sultan River, in Snohomish County; beginning that date, gage 1½ miles downstream, near head of Horseshoe Bend.

Monthly discharge of Sultan River near Sultan.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
August 13-31.....			136	3,780	B.
September.....			458	27,300	B.
1911-12.					
October.....			226	13,900	B.
November.....			1,810	108,000	C.
December.....			923	56,800	C.
January.....			1,050	64,600	C.
February.....			928	53,400	C.
March.....			263	16,200	C.
April.....			529	31,500	C.
May.....			936	57,600	C.
June.....			761	45,300	C.
July.....			458	28,200	C.
August.....			304	18,700	C.
September.....			328	19,500	C.
The year.....			706	514,000	
1912-13.					
October.....			698	42,900	B.
November.....			1,340	79,700	B.
December.....			837	51,500	B.
January.....			633	38,900	C.
February.....			782	43,400	B.
March.....			568	34,900	C.
April.....			934	55,600	B.
May.....			1,300	79,900	B.
June.....			1,320	78,600	B.
July.....			940	57,800	C.
August.....			304	18,700	C.
September.....			574	34,200	B.
The year.....			850	616,000	

Monthly discharge of Sultan River near Sultan—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- raey.
	Maximum.	Minimum.	Mean.		
1913-14.					
October.....	6,350	206	992	61,000	B.
November.....	3,710	275	1,060	63,100	B.
December.....	1,010	234	455	28,000	B.
January.....	6,650	275	1,190	73,200	B.
February.....	3,460	227	780	43,300	A.
March.....	2,820	411	990	60,900	A.
April.....	2,470	368	978	58,200	A.
May.....	1,400	541	794	48,800	A.
June.....	2,680	435	806	48,000	A.
July.....	617	140	289	17,800	A.
August.....	161	92	123	7,560	A.
September.....	2,540	83	593	35,300	A.
The year.....	6,650	83	753	545,000	
1914-15.					
October.....	3,140	250	845	52,000	A.
November.....	3,460	633	1,360	80,900	A.
December.....	1,740	135	485	29,800	A.
January.....	1,100	227	499	30,700	A.
February.....	1,140	358	633	35,200	A.
March.....	1,510	258	508	31,200	A.
April.....	6,650	297	1,090	64,900	A.
May.....	2,070	227	524	32,200	A.
June.....	659	227	367	21,800	A.
July.....	590	139	233	14,300	A.
August.....	134	77	95.4	5,870	A.
September.....	139	71	94.1	5,600	A.
The year.....	6,650	71	558	404,000	
1915-16.					
October.....	3,710	149	998	61,400	A.
November.....	3,380	345	1,060	63,100	A.
December.....	4,650	328	1,040	64,000	A.
January.....	2,610	124	348	21,400	A.
February.....	4,480	202	1,250	71,900	A.
March.....	4,480	332	1,370	84,200	A.
April.....	2,250	573	1,000	59,500	A.
May.....	1,700	710	1,050	64,600	A.
June.....	1,970	690	1,110	66,000	A.
July.....	2,500	501	936	57,600	A.
August.....	484	187	304	18,700	A.
September.....	1,480	152	376	22,400	A.
The year.....	4,650	124	901	655,000	
1916-17.					
October.....	1,270	90	203	12,500	A.
November.....	5,640	248	1,010	60,100	A.
December.....	1,090	183	440	27,100	A.
January.....	3,040	198	679	41,800	A.
February.....	2,500	238	903	50,200	A.
March.....	710	202	332	20,400	A.
April.....	2,400	332	1,020	60,700	A.
May.....	2,420	860	1,500	92,200	A.
June.....	3,860	1,290	2,110	126,000	A.
July.....	1,960	457	1,200	73,800	A.
August.....	636	168	342	21,000	B.
September.....	817	109	212	12,600	A.
The year.....	5,640	90	827	598,000	
1917-18.					
October.....	752	120	270	16,600	A.
November.....	1,750	157	493	29,300	A.
December.....	15,600	472	4,500	277,000	B.
January.....	5,060	.....	1,820	110,000	B.
February.....	3,190	227	929	51,600	B.
March.....	3,670	171	803	49,400	A.
April.....	1,940	460	938	55,800	A.
May.....	1,700	570	900	55,300	A.
June.....	1,580	304	781	46,500	A.
July.....	412	166	266	16,400	A.
August.....	1,660	131	386	23,700	A.
September.....	164	79	106	6,310	A.
The year.....	15,600	79	1,020	740,000	

Monthly discharge of Sultan River near Sultan—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1918-19.					
October.....		82	860	52,900	B.
November.....	2,710	268	902	53,700	A.
December.....	8,450	.....	1,830	113,000	C.
January.....	6,180	192	1,330	81,800	C.
February.....		279	643	35,700	C.
March.....	1,750	339	695	42,700	A.
April.....	2,920	588	1,360	80,900	B.
May.....	3,490	609	1,340	82,400	B.
June.....		440	811	48,300	B.
July.....	746	229	469	28,800	B.
August.....	220	99	149	9,160	B.
September.....		79	156	9,280	B.
The year.....	8,450	79	881	639,000	

NOTE.—Maximum discharge during period of record, 20,600 second-feet at about 9 a. m. Dec. 18, 1917; minimum discharge, 71 second-feet Sept. 29, 1915. Data concerning rating curve, operation of water-stage recorder, and condition of intake prior to Oct. 1, 1913, inadequate to permit accurate determinations of daily discharge during periods of low flow; maximum and minimum daily discharge not published.

Yearly discharge of Sultan River near Sultan.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1912.....			226	Oct.....	706	514,000
1913.....			304	Aug.....	850	616,000
1914.....	6,650	83	123	Aug.....	753	545,000
1915.....	6,650	71	94.1	Sept.....	558	404,000
1916.....	4,650	124	304	Aug.....	901	655,000
1917.....	5,640	90	203	Oct.....	827	598,000
1918.....	15,600	79	106	Sept.....	1,020	738,000
1919.....	8,450	79	149	Aug.....	881	639,000
The period.....	15,600	71	94.1	Sept., 1915.	812	589,000

MIDDLE FORK OF SNOQUALMIE RIVER NEAR NORTH BEND (34).

Prior to August 7, 1915, at highway bridge half a mile above junction with North Fork; beginning that date, 2¼ miles upstream, 1 mile southeast of North Bend, in King County. Staff gage used at lower site; water-stage recorder (Pl. III, B) at upper site.

Drainage area, 184 square miles; measured on topographic and county maps.

Monthly discharge of Middle Fork of Snoqualmie River near North Bend.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907.							
August.....			310	1.68	1.94	19,100	C.
September.....	1,130	266	485	2.64	2.94	28,900	D.
1907-8.							
October.....	330	226	278	1.51	1.74	17,100	D.
November.....		352	819	4.45	4.96	48,700	D.
December.....		504	1,120	6.09	7.02	68,900	D.
January.....	734	424	593	3.22	3.71	36,500	D.
February.....	734	400	507	2.76	2.98	29,200	D.
March.....			1,700	9.24	10.65	105,000	D.
April.....			1,400	7.61	8.49	83,300	D.
May.....			1,700	9.24	10.65	105,000	D.
June.....			2,200	12.0	13.39	131,000	D.
July.....			1,200	6.52	7.52	73,800	D.
August.....			400	2.17	2.50	24,600	D.
September.....	446	154	231	1.26	1.41	13,700	C.
The year.....		154	1,010	5.49	75.02	737,000	
1908-9.							
October.....	3,170	222	686	3.73	4.30	42,200	C.
November.....	5,590	248	1,060	5.76	6.43	63,100	D.
December.....	2,480	176	933	5.07	5.84	57,400	C.
January.....	4,550	446	1,370	7.45	8.59	84,200	D.
February.....	3,050	372	845	4.59	4.78	46,900	C.
March.....	828	534	631	3.43	3.95	38,800	C.
April.....	2,930	584	997	5.42	6.05	59,300	C.
May.....	3,170	900	1,510	8.21	9.46	92,800	D.
June.....	5,460	1,300	2,040	11.1	12.38	121,000	D.
July.....	1,950	488	895	4.86	5.60	55,000	C.
August.....	488	176	298	1.62	1.87	18,300	C.
September.....	900	176	340	1.85	2.06	20,200	C.
The year.....	5,590	176	966	5.25	71.31	699,000	
1909-10.							
October.....	975	338	552	3.00	3.46	33,900	C.
November.....			3,500	19.0	21.20	208,000	D.
December.....			1,550	8.42	9.71	95,300	D.
January.....	4,450	342	1,210	6.58	7.59	74,400	C.
February.....	2,760	438	842	4.57	4.76	46,800	C.
March.....	5,490	1,000	2,340	12.7	14.64	144,000	C.
April.....	3,340	1,000	1,710	9.29	10.36	102,000	C.
May.....	4,840	1,080	1,880	10.2	11.76	116,000	C.
June.....	3,220	648	1,070	5.82	6.49	63,700	C.
July.....	748	372	554	3.01	3.47	34,100	C.
August.....	372	222	256	1.39	1.60	15,700	C.
September.....	558	174	214	1.16	1.29	12,700	C.
The year.....		174	1,310	7.12	96.33	947,000	
1910-11.							
October.....	7,960	516	1,840	10.0	11.53	113,000	C.
November.....			2,300	12.5	13.95	137,000	D.
December.....			1,100	5.98	6.89	67,600	D.
January.....			800	4.35	5.02	49,200	D.
February.....			390	2.12	2.21	21,700	D.
March.....			590	3.21	3.70	36,300	D.
April.....	1,140	488	719	3.91	4.36	42,800	C.
May.....	2,260	975	1,400	7.61	8.77	86,100	D.
June.....	2,980	864	1,350	7.34	8.19	80,300	D.
July.....	1,330	476	799	4.34	5.00	49,100	C.
August.....	476	372	403	2.19	2.52	24,800	C.
September.....	2,320	372	727	3.95	4.41	43,300	C.
The year.....		372	1,040	5.65	76.55	751,000	
1911-12.							
October.....	1,140	276	369	2.01	2.32	22,700	C.
November.....		276	3,040	16.5	18.41	181,000	D.
December.....	2,280	710	1,390	7.55	8.70	85,500	C.
January.....	8,130	565	1,840	10.0	11.53	113,000	C.
February.....	3,090	635	1,370	7.45	8.04	78,800	C.
March.....	875	200	429	2.33	2.69	26,400	C.
April.....	1,370	635	856	4.65	5.19	50,900	C.
May.....	4,440	790	1,960	10.7	12.34	121,000	C.
June.....	2,590	1,160	1,610	8.75	9.76	95,800	C.
July.....	1,850	370	745	4.05	4.67	45,800	C.
August.....	1,060	255	356	1.93	2.22	21,900	C.
September.....	3,270	292	716	3.89	4.34	42,600	D.
The year.....		200	1,220	6.63	90.21	885,000	

Monthly discharge of Middle Fork of Snoqualmie River near North Bend—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per quare mile.	Inches.	Acre-foot.	
1912-13.							
October.....	1,080	391	685	3.72	4.29	42,100	D.
November.....	3,590	580	1,560	8.48	9.46	92,800	D.
December.....	2,390	711	1,040	5.65	6.51	64,000	D.
January.....		358	1,040	5.65	6.51	64,000	D.
February.....	3,920	421	1,100	5.98	6.23	61,100	D.
March.....	1,520	730	1,000	5.43	6.26	61,500	C.
April.....		912	1,410	7.66	8.55	83,900	C.
May.....			2,200	12.0	13.83	135,000	D.
June.....	4,500	1,700	2,650	14.4	16.07	158,000	C.
July.....	2,480	779	1,600	8.70	10.03	98,400	B.
August.....	838	335	526	2.86	3.30	32,300	C.
September.....	3,360	300	672	3.65	4.07	40,000	B.
The year.....		300	1,290	7.01	95.11	933,000	
1913-14.							
October.....	8,170	270	1,720	9.35	10.78	106,000	B.
November.....	3,190	636	1,410	7.66	8.55	83,900	B.
December.....	1,570	508	808	4.39	5.06	49,700	B.
January.....	8,100	606	1,710	9.29	10.71	105,000	B.
February.....	2,080	488	846	4.60	4.79	47,000	B.
March.....	2,860	654	1,300	7.07	8.15	79,900	B.
April.....	3,550	600	1,550	8.42	9.39	92,200	B.
May.....	2,700	1,010	1,680	9.13	10.53	103,000	B.
June.....	2,080	838	1,320	7.17	8.00	78,600	B.
July.....	1,130	295	576	3.13	3.61	35,400	B.
August.....	295	189	240	1.30	1.50	14,800	B.
September.....	1,380	169	460	2.50	2.79	27,400	B.
The year.....	8,170	169	1,140	6.20	83.86	823,000	
1914-15.							
October.....	2,940	328	909	4.94	5.70	55,900	B.
November.....	7,680	806	2,090	11.4	12.72	124,000	B.
December.....	727	306	429	2.33	2.69	26,400	B.
January.....	898	355	548	2.98	3.44	33,700	B.
February.....	739	427	542	2.95	3.07	30,100	B.
March.....	1,800	394	842	4.58	5.28	51,800	B.
April.....	6,790	569	1,490	8.10	9.04	88,700	B.
May.....	3,360	467	852	4.53	5.34	52,400	B.
June.....	935	452	598	3.25	3.63	35,600	A.
July.....	833	318	448	2.43	2.80	27,500	A.
August.....	313	182	228	1.24	1.43	14,000	A.
September.....	451	150	196	1.07	1.19	11,700	A.
The year.....	7,680	150	762	4.14	56.33	552,000	
1915-16.							
October.....	4,190	277	1,370	7.45	8.59	84,200	A.
November.....	5,230	684	1,610	8.75	9.76	95,800	A.
December.....	4,590	659	1,460	7.93	9.14	89,800	A.
January.....	2,240	315	602	3.27	3.77	37,000	A.
February.....	5,410	456	1,730	9.40	10.14	99,500	A.
March.....	7,230	690	2,150	11.7	13.49	132,000	A.
April.....	2,880	1,060	1,570	8.53	9.52	93,400	A.
May.....	3,150	1,020	1,750	9.51	10.96	108,000	A.
June.....	4,950	1,390	2,600	14.1	15.73	155,000	A.
July.....	4,860	1,060	2,070	11.2	12.91	127,000	A.
August.....	1,170	471	735	3.99	4.60	45,200	A.
September.....	1,570	268	497	2.70	3.01	29,600	A.
The year.....	7,230	268	1,510	8.21	111.62	1,100,000	
1916-17.							
October.....	740	177	247	1.34	1.54	15,200	A.
November.....	4,480	394	1,180	6.41	7.15	70,200	A.
December.....	1,300	323	686	3.73	4.30	42,200	A.
January.....	2,700	331	953	5.18	5.97	58,600	A.
February.....	3,560	455	1,340	7.29	7.59	74,400	A.
March.....	921	347	533	2.90	3.34	32,800	A.
April.....	2,480	551	1,260	6.85	7.64	75,000	A.
May.....	3,560	1,020	2,040	11.1	12.80	125,000	A.
June.....	5,220	1,870	3,380	18.4	20.53	201,000	A.
July.....	4,240	1,130	2,650	14.4	16.60	163,000	A.
August.....	1,170	372	697	3.79	4.37	42,900	A.
September.....	747	240	344	1.87	2.09	20,500	A.
The year.....	5,220	177	1,270	6.90	93.92	921,000	

Monthly discharge of Middle Fork of Snoqualmie River near North Bend—Cont'd.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....	836	202	371	2.02	2.33	22,800	A.
November.....	2,120	301	703	3.82	4.26	41,800	A.
December.....	15,400	747	5,020	27.3	31.47	309,000	B.
January.....	6,870	1,170	2,810	15.3	17.64	173,000	A.
February.....	3,880	543	1,380	7.50	7.81	76,600	B.
March.....			1,030	5.60	6.46	63,300	B.
April.....	2,680	876	1,540	8.37	9.34	91,600	A.
May.....	3,320	1,090	1,750	9.51	10.96	108,000	A.
June.....	3,750	1,090	2,130	11.60	12.94	127,000	A.
July.....	1,170	445	7.60	4.13	4.76	46,700	A.
August.....	1,930	357	763	4.15	4.78	46,900	A.
September.....	400	184	254	1.38	1.54	15,100	A.
The year.....	15,400	184	1,550	8.42	114.29	1,120,000	A
1918-19.							
October.....	7,070	194	1,390	7.55	8.70	85,500	A.
November.....	2,890	595	1,180	6.41	7.15	70,200	A.
December.....	9,790	617	2,320	12.6	14.53	143,000	B.
January.....		365	2,210	12.0	13.83	136,000	C.
February.....	1,180	401	703	3.82	3.98	39,000	A.
March.....	2,040	616	954	5.18	5.97	58,700	A.
April.....	2,970	860	1,590	8.64	9.64	94,600	A.
May.....	5,410	1,020	2,040	11.1	12.80	125,000	A.
June.....	2,420	990	1,640	8.91	9.94	97,600	A.
July.....	1,560	480	975	5.30	6.11	60,000	A.
August.....	480	236	349	1.90	2.19	21,500	A.
September.....	1,460	203	325	1.77	1.98	19,300	A.
The year.....	9,790	194	1,310	7.12	96.82	950,000	

NOTE.—Maximum discharge during period of record, 18,300 second-feet at 10 a. m. Dec. 18, 1917; discharge may have been greater in November, 1909, or November, 1911; minimum discharge 146, second-feet at 1 p. m. Sept. 30, 1915. Monthly mean discharge August, 1907, July and August, 1908, December, 1909, November and December, 1910, and January to March, 1911, estimated by comparison with records of North and South forks of Snoqualmie River. Monthly mean discharge March to June, 1908, and May, 1913, estimated by comparison of records of total flow of Snoqualmie River with records of Yakima River at Cle Elum and ratio of Middle Fork to sum of discharge at three forks, by years. Mean discharge November, 1909, estimated by comparison of record of total flow of Snoqualmie River with records of Yakima River at Cle Elum and Cedar River near Ravensdale and ratio of Middle Fork to sum of discharge at the three forks.

Yearly discharge of Middle Fork of Snoqualmie River near North Bend.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maxi- mum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1908.....		154	231	Sept.....	1,010	5.49	75.02	737,000
1909.....	5,590	176	298	Aug.....	966	5.25	71.31	699,000
1910.....		174	214	Sept.....	1,310	7.12	96.33	947,000
1911.....		372	390	Feb.....	1,040	5.65	76.55	751,000
1912.....		200	356	Aug.....	1,220	6.63	90.21	885,000
1913.....		300	526	Aug.....	1,290	7.01	95.11	933,000
1914.....	8,170	169	240	Aug.....	1,140	6.20	83.86	823,000
1915.....	7,680	150	196	Sept.....	762	4.14	56.33	552,000
1916.....	7,230	268	497	Sept.....	1,510	8.21	111.62	1,100,000
1917.....	5,220	177	247	Oct.....	1,270	6.90	93.92	921,000
1918.....	15,400	184	254	Sept.....	1,550	8.42	114.29	1,120,000
1919.....	9,790	194	325	Sept.....	1,310	7.12	96.82	950,000
The period.....		150	196	Sept., 1915	1,200	6.51	88.45	868,000

SNOQUALMIE RIVER NEAR SNOQUALMIE (35).

Staff gage 300 feet below mouth of South Fork, 2 miles east of Snoqualmie, in King County. Discharge beginning August, 1907, determined by combining results at gaging stations on the three forks.

Drainage area, 371 square miles; measured on topographic and county maps.

Monthly discharge of Snoqualmie River near Snoqualmie.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1898.							
May.....	6,950	2,890	4,480	12.1	13.95	275,000	B.
June.....	6,590	2,280	4,710	12.7	14.17	280,000	B.
July.....	3,300	1,090	2,040	5.50	6.34	125,000	A.
August.....	1,090	520	691	1.86	2.14	42,500	A.
September.....	3,890	468	1,030	2.78	3.10	61,300	A.
The period.....						784,000	
1898-99.							
October.....	6,050	915	2,220	5.98	6.89	136,000	A.
November.....	7,670	1,680	3,610	9.73	10.86	215,000	A.
December.....	14,800	970	3,220	8.68	10.01	198,000	A.
January.....	20,100	1,290	5,270	14.2	16.37	324,000	C.
February.....	19,000	1,770	4,800	12.9	13.43	267,000	B.
March.....	3,440	1,160	1,800	4.85	5.59	111,000	A.
April.....	9,170	1,220	2,970	8.01	8.94	177,000	A.
May.....	11,300	2,060	5,120	13.8	15.91	315,000	B.
June.....	10,700	5,020	6,930	18.7	20.86	412,000	B.
July.....			3,570	9.62	11.09	220,000	D.
August.....			840	2.26	2.61	51,600	D.
September.....			970	2.61	2.91	57,700	D.
The year.....	20,100		3,430	9.25	125.47	2,480,000	
1900.							
January.....	20,100	1,510	3,790	10.2	11.76	233,000	A.
February.....	6,770	1,510	2,760	7.44	7.75	153,000	A.
March.....	17,900	1,860	3,820	10.3	11.87	235,000	B.
April.....	6,230	1,220	2,570	6.93	7.73	153,000	A.
May.....	4,680	2,060	3,060	8.25	9.51	188,000	A.
June.....	6,410	1,860	2,810	7.57	8.45	167,000	A.
July 1-16.....	3,020	1,360	2,140	5.77	3.43	67,900	A.
The period.....						1,200,000	
1902.							
September 14-30.....	4,070	615	1,040	2.80	1.77	35,100	D.
1902-3.							
October.....	2,280	615	840	2.26	2.61	51,600	D.
November.....	4,850	1,550	2,710	7.30	8.14	161,000	A.
December.....	17,500	1,220	3,730	10.1	11.64	229,000	A.
January.....	24,400	1,920	5,140	13.9	16.03	316,000	C.
February.....	2,710	995	1,290	3.48	3.62	71,600	A.
March.....	3,990	850	1,460	3.94	4.54	89,800	A.
April.....	4,110	1,160	1,960	5.28	5.89	117,000	A.
May.....	6,710	2,160	4,140	11.2	12.91	255,000	A.
June.....	8,530	3,110	5,290	14.3	15.95	315,000	A.
July.....	3,760	1,100	2,240	6.04	6.96	138,000	A.
August.....	1,050	520	745	2.01	2.32	45,800	C.
September.....	7,080	388	2,440	6.58	7.34	145,000	D.
The year.....	24,400	388	2,670	7.20	97.95	1,930,000	
1903-4.							
October.....	6,520	850	2,240	6.04	6.96	138,000	C.
November.....	11,000	1,220	3,250	8.76	9.77	193,000	A.
December.....	9,100	1,620	3,240	8.73	10.06	199,000	A.
January.....	13,600	1,410	3,330	8.98	10.35	205,000	B.
February.....	2,810	995	1,380	3.72	4.01	79,400	A.
March.....	7,550	945	1,970	5.31	6.12	121,000	A.
April.....	9,700	1,620	4,210	11.3	12.61	251,000	A.
May.....	4,720	2,000	3,300	8.89	10.25	203,000	A.
June.....	4,980	2,250	3,590	9.68	10.80	214,000	A.
July.....	3,990	895	1,780	4.80	5.53	109,000	A.
August.....			700	1.89	2.18	43,000	D.
September.....			580	1.56	1.74	34,500	D.
The year.....	13,600		2,470	6.66	90.38	1,790,000	

Monthly discharge of Snoqualmie River near Snoqualmie—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907.							
August.....			678	1.83	2.11	41,700	C.
September.....			981	2.64	2.94	58,400	C.
1907-8.							
October.....			588	1.58	1.82	36,200	C.
November.....			1,910	5.15	5.75	114,000	C.
December.....			2,490	6.71	7.74	153,000	C.
January.....			1,420	3.83	4.42	87,300	C.
February.....			1,160	3.13	3.38	66,700	C.
March.....			3,800	10.2	11.76	234,000	D.
April.....			3,000	8.09	9.03	179,000	D.
May.....			3,600	9.70	11.18	221,000	D.
June.....			4,300	11.6	12.94	256,000	D.
July.....			2,170	5.85	6.74	133,000	C.
August.....			742	2.00	2.31	45,600	C.
September.....			499	1.35	1.51	29,700	C.
The year.....			2,140	5.77	78.58	1,560,000	
1908-9.							
October.....			1,260	3.40	3.92	77,500	C.
November.....			2,250	6.06	6.76	134,000	C.
December.....			1,920	5.18	5.97	118,000	C.
January.....			2,800	7.55	8.70	172,000	C.
February.....			1,860	5.01	5.22	103,000	C.
March.....			1,430	3.85	4.44	87,900	C.
April.....			2,130	5.74	6.40	127,000	C.
May.....			3,170	8.54	9.85	195,000	C.
June.....			4,210	11.3	12.61	251,000	C.
July.....			1,730	4.66	5.37	106,000	C.
August.....			596	1.61	1.86	36,600	C.
September.....			721	1.94	2.16	42,900	C.
The year.....			2,000	5.39	73.26	1,450,000	
1909-10.							
October.....			1,110	2.99	3.45	68,200	C.
November.....			7,000	18.9	21.09	417,000	D.
December.....			3,280	8.84	10.19	202,000	C.
January.....			2,320	6.25	7.21	143,000	C.
February.....			1,760	4.74	4.94	97,800	C.
March.....			5,100	13.7	15.79	314,000	C.
April.....			3,670	9.89	11.03	218,000	C.
May.....			3,660	9.87	11.38	225,000	C.
June.....			1,920	5.18	5.78	114,000	C.
July.....			884	2.38	2.74	51,400	C.
August.....			422	1.14	1.31	25,900	C.
September.....			374	1.01	1.13	22,300	C.
The year.....			2,630	7.09	96.04	1,900,000	
1910-11.							
October.....			3,390	9.14	10.54	208,000	C.
November.....			4,600	12.4	13.83	274,000	D.
December.....			2,270	6.12	7.06	140,000	C.
January.....			1,700	4.53	5.28	105,000	C.
February.....			845	2.28	2.37	46,900	C.
March.....			1,320	3.56	4.10	81,200	C.
April.....			1,570	4.23	4.72	93,400	C.
May.....			3,060	8.25	9.51	188,000	C.
June.....			2,660	7.17	8.00	158,000	C.
July.....			1,390	3.75	4.32	85,500	C.
August.....			618	1.67	1.92	38,000	C.
September.....			1,380	3.72	4.15	82,100	C.
The year.....			2,070	5.58	75.80	1,500,000	
1911-12.							
October.....			716	1.93	2.22	44,000	C.
November.....			5,780	15.6	17.40	344,000	D.
December.....			2,580	6.95	8.01	159,000	C.
January.....			3,580	9.65	11.12	220,000	C.
February.....			2,880	7.76	8.37	166,000	C.
March.....			963	2.60	3.00	59,200	C.
April.....			1,770	4.77	5.32	105,000	C.
May.....			3,820	10.3	11.87	235,000	C.
June.....			2,900	7.82	8.72	173,000	C.
July.....			1,340	3.61	4.16	82,400	C.
August.....			754	2.03	2.34	46,400	C.
September.....			1,310	3.53	3.94	78,000	C.
The year.....			2,360	6.36	86.47	1,710,000	

Monthly discharge of Snoqualmie River near Snoqualmie—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1912-13.							
October			1,260	3.40	3.92	77,500	C.
November			3,130	8.44	9.42	186,000	D.
December			2,040	5.50	6.34	125,000	D.
January			2,390	6.44	7.42	147,000	D.
February			2,200	5.93	6.18	122,000	C.
March			1,890	5.09	5.87	116,000	C.
April			2,760	7.44	8.30	164,000	D.
May			4,300	11.6	13.37	264,000	D.
June			4,730	12.7	14.17	281,000	B.
July			2,730	7.36	8.48	168,000	B.
August			872	2.35	2.71	53,600	B.
September			1,250	3.37	3.76	74,400	B.
The year			2,460	6.63	89.94	1,780,000	
1913-14.							
October			3,110	8.38	9.66	191,000	B.
November			2,760	7.44	8.30	164,000	B.
December			1,440	3.88	4.47	88,500	B.
January			3,420	9.22	10.63	210,000	B.
February			2,080	5.61	5.84	116,000	B.
March			3,030	8.17	9.42	186,000	B.
April			3,310	8.92	9.95	197,000	B.
May			3,320	8.95	10.32	204,000	B.
June			2,630	7.09	7.91	156,000	B.
July			1,120	3.02	3.48	68,900	B.
August			444	1.20	1.38	27,300	B.
September			933	2.52	2.81	55,500	B.
The year			2,300	6.20	84.17	1,660,000	
1914-15.							
October			1,830	4.93	5.68	113,000	B.
November			3,960	10.7	11.94	236,000	B.
December			1,050	2.83	3.26	64,600	A.
January			1,350	3.64	4.20	83,000	A.
February			1,310	3.53	3.68	72,800	A.
March			1,920	5.18	5.97	118,000	A.
April			3,140	8.46	9.44	187,000	B.
May			1,860	5.01	5.78	114,000	A.
June			1,240	3.34	3.73	73,800	A.
July			923	2.49	2.87	56,800	A.
August			450	1.21	1.40	27,700	A.
September			394	1.06	1.18	23,400	A.
The year			1,620	4.37	59.13	1,170,000	
1915-16.							
October			2,510	6.77	7.80	154,000	B.
November			3,090	8.33	9.29	184,000	B.
December			3,070	8.27	9.53	189,000	B.
January			1,320	3.56	4.10	81,200	B.
February			3,520	9.49	10.24	202,000	B.
March			4,520	12.2	14.07	278,000	B.
April			3,300	8.89	9.92	196,000	B.
May			3,710	10.0	11.53	228,000	B.
June			4,950	13.3	14.84	295,000	B.
July			3,840	10.4	11.99	236,000	B.
August			1,330	3.58	4.13	81,800	B.
September			927	2.50	2.79	55,200	B.
The year			3,000	8.09	110.23	2,180,000	
1916-17.							
October			517	1.39	1.60	31,800	A
November			2,340	6.31	7.04	139,000	A
December			1,520	4.10	4.73	93,500	A
January			2,100	5.66	6.52	129,000	A
February			2,920	7.87	8.20	162,000	A
March			1,170	3.15	3.63	71,900	A
April			2,780	7.49	8.36	165,000	A
May			4,240	11.4	13.14	261,000	A
June			6,620	17.8	19.86	394,000	A
July			4,690	12.6	14.53	288,000	A
August			1,190	3.21	3.70	73,200	A
September			613	1.65	1.84	36,500	A
The year			2,550	6.87	93.15	1,840,000	

Monthly discharge of Snoqualmie River near Snoqualmie—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....			691	1.86	2.14	42,500	A
November.....			1,310	3.53	3.94	78,000	A
December.....			9,740	26.3	30.32	599,000	B
January.....			5,660	15.3	17.64	348,000	A
February.....			2,990	8.06	8.39	166,000	A
March.....			2,260	6.09	7.02	139,000	A
April.....			3,140	8.46	9.44	187,000	A
May.....			3,380	9.11	10.50	208,000	A
June.....			3,560	9.60	10.71	212,000	A
July.....			1,200	3.23	3.72	73,800	A
August.....			1,400	3.77	4.35	86,100	A
September.....			487	1.31	1.46	29,000	A
The year.....			3,000	8.09	109.63	2,170,000	
1918-19.							
October.....			2,520	6.79	7.83	155,000	A
November.....			2,400	6.47	7.22	143,000	A
December.....			4,650	12.5	14.41	286,000	B
January.....			4,460	12.0	13.83	274,000	B
February.....			1,800	4.85	5.05	100,000	A
March.....			1,990	5.36	6.18	122,000	A
April.....			3,400	9.16	10.22	202,000	A
May.....			4,070	11.0	12.68	250,000	A
June.....			3,160	8.52	9.51	188,000	A
July.....			1,680	4.53	5.22	103,000	A
August.....			615	1.66	1.91	37,800	A
September.....			602	1.62	1.81	35,800	A
The year.....			2,620	7.06	95.87	1,900,000	

NOTE.—Monthly mean discharge beginning August, 1907, is sum of mean discharge at the three forks. See footnotes to table of discharge of the separate forks for method of estimating discharge during breaks in the records. Crest discharge, 31,400 second-feet at 8 a. m. Dec. 18, 1917 (discharge may have been greater in November, 1909, and November, 1911); extreme minimum discharge, 283 second-feet, Sept. 30, 1915. Monthly discharge, for July to September, 1899, determined by comparison with record of Cedar River near Ravensdale and Landsberg; for August and September, 1904, by comparison with record of South Fork of Skykomish River near Index.

Yearly discharge of Snoqualmie River near Snoqualmie.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maxi- mum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1899.....	20,100		840	Aug.....	3,430	9.25	125.47	2,480,000
1903.....	24,400	388	745	Aug.....	2,670	7.20	97.95	1,930,000
1904.....	13,600		580	Sept.....	2,470	6.66	90.38	1,790,000
1908.....			499	Sept.....	2,140	5.77	78.58	1,560,000
1909.....			596	Aug.....	2,000	5.39	73.26	1,450,000
1910.....			374	Sept.....	2,630	7.09	96.04	1,900,000
1911.....			618	Aug.....	2,070	5.58	75.80	1,500,000
1912.....			716	Oct.....	2,360	6.36	86.47	1,710,000
1913.....			872	Aug.....	2,460	6.63	89.94	1,780,000
1914.....			444	Aug.....	2,300	6.20	84.17	1,660,000
1915.....			394	Sept.....	1,620	4.37	59.13	1,170,000
1916.....			927	Sept.....	3,000	8.09	110.23	2,180,000
1917.....			517	Oct.....	2,550	6.87	93.15	1,840,000
1918.....			487	Sept.....	3,000	8.09	109.63	2,170,000
1919.....			602	Sept.....	2,620	7.06	95.87	1,900,000
The period.....			374	Sept., 1910.	2,490	6.71	91.07	1,800,000

NORTH FORK OF SNOQUALMIE RIVER AT CABLE BRIDGE, NEAR NORTH BEND (36).

Water-stage recorder 300 feet below Hancock Creek, 600 feet above cable bridge, 6 miles above mouth of river, and 6 miles northeast of North Bend, in King County. Drainage area, 80 square miles; measured on topographic and county maps.

Monthly discharge of North Fork of Snoqualmie River at cable bridge, near North Bend.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1913-14.					
November 7-30.....	2,020	341	749	35,700	A.
December.....	800	206	388	23,900	A.
January.....	3,200	257	752	46,200	A.
February.....	1,280	250	469	26,000	A.
March.....	1,740	304	714	43,900	A.
April.....	1,670	287	738	43,900	A.
May.....	1,020	548	726	44,600	A.
June.....	1,420	425	660	39,300	A.
July.....	532	109	237	14,600	A.
August.....	107	67	83.2	5,120	A.
September.....	800	67	255	15,200	A.
The period.....				338,000	
1914-15.					
October.....	1,320	156	495	30,400	A.
November.....	1,640	480	896	53,300	A.
December.....	722	140	255	15,700	A.
January.....	728	226	410	25,200	A.
February.....	526	273	370	20,500	A.
March.....	1,220	257	536	33,000	A.
April.....	2,760	360	781	46,500	A.
May.....	1,890	295	584	35,900	A.
June.....	582	230	341	20,300	A.
July.....	576	159	255	15,700	A.
August.....	156	75	100	6,150	A.
September.....	148	74	91.1	5,420	A.
The year.....	2,760	74	425	308,000	

NOTE.—Oct. 1-17, 1915, mean discharge, 574 second-feet; run-off, 19,400 acre-feet. Maximum discharge during period of record, 3,840 second-feet at 2 a. m. Jan. 5, 1914; minimum discharge, 67 second-feet Aug. 29 to Sept. 2, 1914.

NORTH FORK OF SNOQUALMIE RIVER NEAR NORTH BEND (37).

At highway bridge one-eighth mile above mouth and 2 miles north of North Bend, in King County, prior to September 26, 1916; at Gabriel ranch 2½ miles, by river, above mouth and 3½ miles northeast of North Bend thereafter. Staff gage used prior to September 2, 1912; water-stage recorder used thereafter.

Drainage area, 102 square miles; measured on topographic and county maps.

Monthly discharge of North Fork of Snoqualmie River near North Bend.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907.							
July 21-31.....	183	153	167	1.64	0.67	3,640	C.
August.....	360	141	197	1.93	2.22	12,100	C.
September.....			320	3.14	3.50	19,000	C.
The period.....						34,700	

Monthly discharge of North Fork of Snoqualmie River near North Bend—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907-8.							
October.....	271	147	189	1.85	2.13	11,600	C.
November.....		167	672	6.59	7.35	40,000	C.
December.....			770	7.55	8.70	47,300	C.
January.....	649	271	466	4.57	5.27	28,700	C.
February.....	555	223	353	3.46	3.73	20,300	C.
March.....			1,200	11.8	13.60	73,800	D.
April.....			900	8.82	9.84	53,600	D.
May.....			1,100	10.8	12.45	67,600	D.
June.....			1,200	11.8	13.17	71,400	D.
July.....	803	202	477	4.68	5.40	29,300	C.
August.....	298	141	174	1.71	1.97	10,700	C.
September.....	246	131	159	1.56	1.74	9,460	C.
The year.....		131	539	6.26	85.35	464,000	
1908-9.							
October.....	1,380	131	358	3.51	4.05	22,000	C.
November.....	3,180	183	664	6.51	7.26	39,500	C.
December.....	1,300	153	576	5.65	6.51	35,400	C.
January.....	2,900	328	917	8.99	10.36	56,400	C.
February.....	1,460	271	594	5.82	6.06	33,000	C.
March.....	555	328	420	4.12	4.75	25,800	C.
April.....	1,790	394	657	6.44	7.18	39,100	C.
May.....	1,880	601	959	9.40	10.84	59,000	C.
June.....	5,170	750	1,360	13.3	14.84	80,900	C.
July.....	1,300	271	527	5.17	5.96	32,400	C.
August.....	298	131	189	1.85	2.13	11,600	C.
September.....	555	131	229	2.25	2.51	13,600	C.
The year.....	5,170	131	619	6.07	82.45	449,000	
1909-10.							
October.....	699	223	373	3.66	4.22	22,900	C.
November.....			2,100	20.6	22.98	125,000	D.
December.....	3,180	430	1,170	11.5	13.26	71,900	C.
January.....	3,080	328	773	7.58	8.74	47,500	C.
February.....	1,880	360	630	6.18	6.44	35,000	C.
March.....	3,470	803	1,640	16.1	18.56	101,000	C.
April.....	2,050	750	1,240	12.2	13.61	73,800	C.
May.....	3,970	693	1,170	11.5	13.26	71,900	D.
June.....	1,810	300	577	5.66	6.32	34,300	C.
July.....	300	126	202	1.98	2.28	12,400	C.
August.....	108	78	81.2	.796	.92	4,990	C.
September.....	300	56	82.8	.812	.91	4,930	C.
The year.....		56	836	8.20	111.50	606,000	
1910-11.							
October.....	3,310	292	973	9.54	11.00	59,800	C.
November.....	6,580	448	1,370	13.4	14.95	81,500	D.
December.....	2,200	346	713	6.99	8.06	43,800	C.
January.....	1,570	243	511	5.01	5.78	31,400	C.
February.....	318	176	242	2.37	2.47	13,400	C.
March.....	894	176	377	3.70	4.27	23,200	C.
April.....	726	292	438	4.29	4.79	26,100	C.
May.....	1,720	576	954	9.35	10.78	58,700	C.
June.....	1,640	411	769	7.54	8.41	45,800	C.
July.....	624	155	379	3.72	4.29	23,300	C.
August.....	176	83	111	1.09	1.26	6,820	C.
September.....	1,350	83	414	4.06	4.53	24,600	C.
The year.....	6,580	83	605	5.93	80.59	438,000	
1911-12.							
October.....	576	134	203	1.99	2.29	12,500	C.
November.....	11,100	134	1,770	17.4	19.41	105,000	D.
December.....	1,500	377	760	7.45	8.59	46,700	D.
January.....	3,280	265	1,000	9.80	11.30	61,500	D.
February.....	1,980	368	823	8.07	8.70	47,300	C.
March.....	331	167	223	2.19	2.52	13,700	C.
April.....	906	331	466	4.57	5.10	27,700	C.
May.....	2,310	489	1,020	10.00	11.53	62,700	C.
June.....	1,130	545	734	7.20	8.03	43,700	C.
July.....	789	207	374	3.67	4.23	23,000	C.
August.....	503	180	247	2.42	2.79	15,200	C.
September.....	1,840	174	407	3.99	4.45	24,200	B.
The year.....	11,100	134	667	6.54	88.94	484,000	

Monthly discharge of North Fork of Snoqualmie River near North Bend—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1912-13.							
October.....		180	377	3.70	4.27	23,200	C. D. D. C. D. D. B. B. B.
November.....		304	944	9.25	10.32	56,200	
December.....			700	6.86	7.91	43,000	
January.....			750	7.35	8.47	46,100	
February.....		257	575	5.64	5.87	31,900	
March.....			500	4.90	5.65	30,700	
April.....			800	7.84	8.75	47,600	
May.....			1,200	11.8	13.60	73,800	
June.....	2,050	819	1,230	12.1	13.50	73,200	
July.....	1,360	284	714	7.00	8.07	43,900	
August.....	284	144	189	1.85	2.13	11,600	
September.....	2,990	144	404	3.96	4.42	24,000	
The year.....		144	698	6.84	92.96	505,000	
1913-14.							
October.....	4,700	183	861	8.44	9.73	52,900	B. B. B. B. B. B. B. B. B. B.
November.....	2,180	219	849	8.32	9.28	50,500	
December.....	955	88	312	3.06	3.53	19,200	
January.....	3,300	470	979	9.60	11.07	60,200	
February.....	1,640	449	754	7.39	7.70	41,900	
March.....	1,880	563	1,040	10.2	11.76	64,000	
April.....	1,680	513	1,000	9.80	10.93	59,500	
May.....	1,300	650	934	9.16	10.56	57,400	
June.....	1,600	508	804	7.88	8.79	47,800	
July.....	603	124	283	2.77	3.19	17,400	
August.....	118	64	86.6	.849	.98	5,320	
September.....	988	59	310	3.04	3.39	18,400	
The year.....	4,700	59	683	6.70	90.91	495,000	
1914-15.							
October.....	1,640	205	601	5.89	6.79	37,000	B. B. A. A. A. A. B. A. A. B.
November.....	2,400	470	1,110	10.9	12.16	66,000	
December.....	828	226	352	3.45	3.98	21,600	
January.....	833	340	520	5.10	5.88	32,000	
February.....	692	372	472	4.63	4.82	26,200	
March.....	1,480	388	655	6.42	7.40	40,300	
April.....	3,660	456	986	9.67	10.79	58,700	
May.....	1,880	401	657	6.44	7.42	40,400	
June.....	704	288	403	3.95	4.41	24,000	
July.....	630	178	294	2.88	3.32	18,100	
August.....	178	74	112	1.10	1.27	6,890	
September.....	150	71	91.9	.901	1.01	5,470	
The year.....	3,660	71	520	5.10	69.25	377,000	
1915-16.							
October.....	1,800	78	691	6.77	7.80	42,500	C. C. C. C. C. C. C. C. C. C.
November.....	3,110	296	840	8.24	9.19	50,000	
December.....	2,650	443	954	9.35	10.78	58,700	
January.....	1,030	238	380	3.73	4.30	23,400	
February.....	3,470	292	1,110	10.9	11.76	63,800	
March.....	5,080	412	1,410	13.8	15.91	86,700	
April.....	1,820	646	933	9.15	10.21	55,500	
May.....	1,690	613	990	9.71	11.20	60,900	
June.....	2,100	862	1,230	12.1	13.50	73,200	
July.....	2,190	537	975	9.56	11.02	60,000	
August.....	502	161	286	2.80	3.23	17,600	
September.....	933	134	246	2.41	2.69	14,600	
The year.....	5,080	78	837	8.21	111.59	607,000	
1916-17.							
October.....	530	81	129	1.26	1.45	7,930	A. A. A. A. A. A. A. A. A. A.
November.....	2,400	278	731	7.17	8.00	43,500	
December.....	875	258	476	4.67	5.38	29,300	
January.....	1,710	254	653	6.40	7.38	40,200	
February.....	2,750	355	977	9.58	9.98	54,300	
March.....	515	245	325	3.19	3.68	20,000	
April.....	1,620	331	850	8.33	9.29	50,600	
May.....	1,940	704	1,200	11.8	13.60	73,800	
June.....	2,770	1,180	1,860	18.2	20.31	111,000	
July.....	1,880	510	1,170	11.5	13.26	71,900	
August.....	486	123	271	2.66	3.07	16,700	
September.....	453	88	143	1.40	1.56	8,510	
The year.....	2,770	81	728	7.14	96.96	528,000	

Monthly discharge of North Fork of Snoqualmie River near North Bend—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....	612	98	195	1.91	2.20	12,000	A.
November.....	1,110	156	393	3.85	4.30	23,400	A.
December.....	7,170	476	2,670	26.2	30.21	164,000	B.
January.....	3,590	688	1,600	15.7	18.10	98,400	A.
February.....	2,540	322	861	8.44	8.79	47,800	A.
March.....	2,200	234	652	6.39	7.37	40,100	A.
April.....	1,460	443	825	8.09	9.03	49,100	A.
May.....	1,510	577	871	8.54	9.85	53,600	A.
June.....	1,410	302	755	7.40	8.26	44,900	A.
July.....	307	157	208	2.04	2.35	12,800	A.
August.....	1,510	153	389	3.81	4.39	23,900	A.
September.....	199	79	115	1.13	1.26	6,840	A.
The year.....	7,170	79	797	7.81	106.11	577,000	
1918-19.							
October.....	3,380	81	685	6.72	7.75	42,100	A.
November.....	1,480	319	670	6.57	7.33	39,900	A.
December.....		358	1,250	12.3	14.18	76,900	B.
January.....		250	1,180	11.6	13.37	72,600	B.
February.....	989	333	469	4.60	4.79	26,000	A.
March.....	1,310	277	493	4.83	5.57	30,300	A.
April.....	1,780	488	1,020	10.0	11.16	60,700	A.
May.....	2,430	617	1,050	10.3	11.87	64,600	A.
June.....	968	404	706	6.92	7.72	42,000	A.
July.....	552	177	358	3.51	4.05	22,000	A.
August.....	212	80	130	1.27	1.46	7,990	A.
September.....	755	76	155	1.52	1.70	9,220	A.
The year.....		76	682	6.69	90.95	494,000	

NOTE.—Maximum discharge during period of record, 11,100 second-feet Nov. 18, 1911 (discharge may have been greater in November, 1909); minimum discharge, 56 second-feet September 26-28, 1910. Monthly mean discharge March to June, 1908, estimated by comparison of record of total flow of Snoqualmie River with record of Yakima River at Cle Elum and ratio of North Fork to sum of discharge at the three forks, by months, during several years record. Mean discharge November, 1909, estimated by comparison of record of total flow of Snoqualmie River with records of Yakima River at Cle Elum and Cedar River near Ravensdale and ratio of North Fork to sum of discharge at the three forks. Monthly mean discharge December, 1912, January and March, 1913, estimated by comparison with records of the Middle and South forks and by comparison of record of total flow of Snoqualmie River with record of flow of Yakima River at Cle Elum. Monthly mean discharge April and May, 1913, estimated by comparison with record of North Fork of Skykomish River at Index.

Yearly discharge of North Fork of Snoqualmie River near North Bend.

Year ending Sept. 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
			Mean.					Month.
1908.....		131	159	Sept.....	639	6.26	85.35	464,000
1909.....	5,170	131	189	Aug.....	619	6.07	82.45	449,000
1910.....		56	81.2	Aug.....	836	8.20	111.50	606,000
1911.....	6,580	83	111	Aug.....	605	5.93	80.59	438,000
1912.....	11,100	134	203	Oct.....	667	6.54	88.94	484,000
1913.....		144	189	Aug.....	698	6.84	92.96	505,000
1914.....	4,700	59	86.6	Aug.....	683	6.70	90.91	495,000
1915.....	3,660	71	91.9	Sept.....	520	5.10	69.25	377,000
1916.....	5,080	78	246	Sept.....	837	8.21	111.59	607,000
1917.....	2,770	81	129	Oct.....	728	7.14	96.96	528,000
1918.....	7,170	79	115	Sept.....	797	7.81	106.11	577,000
1919.....		76	130	Aug.....	682	6.69	90.95	494,000
The period.	11,100	56	81.2	Aug., 1910.	693	6.79	92.30	502,000

SOUTH FORK OF SNOQUALMIE RIVER NEAR GARCIA (38).

Gage located 150 feet below Alice Creek, a quarter of a mile above Fifteenmile Bridge, 1½ miles southeast of Garcia, in King County. Staff gage used prior to November, 6, 1913; water-stage recorder thereafter.

Drainage area, 45 square miles; measured on topographic maps.

Monthly discharge of South Fork of Snoqualmie River near Garcia.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910.							
August 4-31.....	54	21	37.0	0.822	0.86	2,050	C.
September.....	102	21	30.0	.667	.74	1,790	C.
The period.....						3,840	
1910-11.							
October.....	2,770	36	521	11.6	13.37	32,000	D.
November.....	3,770	168	650	14.4	16.07	38,700	D.
December.....	402	102	168	3.73	4.30	10,300	C.
January.....	1,060	102	212	4.71	5.43	13,000	C.
February.....	102	54	71.4	1.59	1.66	3,970	C.
March.....	350	54	111	2.47	2.85	6,820	C.
April.....	805	133	279	6.20	6.92	16,600	D.
May.....	970	350	570	12.7	14.64	35,000	D.
June.....	1,060	208	438	9.73	10.86	26,100	D.
July.....	300	54	135	3.00	3.46	8,300	C.
August.....	54	36	41.2	.916	1.06	2,530	C.
September.....	650	21	141	3.13	3.49	8,390	D.
The year.....	3,770	21	279	6.20	84.11	202,000	
1911-12.							
October.....	168	54	72.7	1.62	1.87	4,470	C.
November.....	4,370	54	901	20.0	22.31	53,600	D.
December.....	504	64	240	5.33	6.14	14,800	C.
January.....	1,320	45	279	6.20	7.15	17,200	C.
February.....	1,140	45	259	5.76	6.21	14,900	C.
March.....	147	30	65.3	1.45	1.67	4,020	C.
April.....	504	115	265	5.89	6.57	15,800	D.
May.....	1,320	273	712	15.8	18.22	43,800	D.
June.....	720	165	433	9.62	10.73	25,800	D.
July.....	225	54	111	2.47	2.85	6,820	C.
August.....	273	45	73.9	1.64	1.89	4,540	C.
September.....	249	45	100	2.22	2.48	5,950	C.
The year.....	4,370	30	291	6.47	88.09	212,000	
1912-13.							
October.....	249	54	120	2.67	3.08	7,380	C.
November.....	1,320	115	409	9.09	10.14	24,300	C.
December.....	800	64	189	4.20	4.84	11,600	C.
January.....	2,220	45	369	8.20	9.45	22,700	C.
February.....	1,950	54	307	6.82	7.10	17,000	C.
March.....	504	45	108	2.40	2.77	6,640	C.
April.....	885	64	298	6.62	7.39	17,700	C.
May.....	1,320	183	690	15.3	17.64	42,400	D.
June.....		440	717	15.9	17.74	42,700	D.
July.....	504	115	274	6.09	7.02	16,800	D.
August.....	115	33	72.5	1.61	1.86	4,460	C.
September.....	504	38	89.7	1.99	2.22	5,340	C.
The year.....	2,220	33	303	6.73	91.25	219,000	
1913-14.							
October.....	2,720	45	418	9.29	10.71	25,700	C.
November.....	659	114	294	6.53	7.29	17,500	A.
December.....	331	90	149	3.31	3.82	9,160	A.
January.....	2,260	93	415	9.22	10.63	25,500	B.
February.....	570	88	171	3.80	3.96	9,500	A.
March.....	896	195	402	8.93	10.30	24,700	B.
April.....	1,270	179	514	11.4	12.72	30,600	B.
May.....	1,180	320	616	13.7	15.79	37,900	B.
June.....	617	216	333	7.40	8.26	19,800	A.
July.....	226	57	111	2.47	2.85	6,820	A.
August.....	55	33	42.4	.942	1.09	2,610	A.
September.....	183	30	71.2	1.58	1.76	4,240	A.
The year.....	2,720	30	296	6.58	89.18	214,000	

Monthly discharge of South Fork of Snoqualmie River near Garcia—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1914-15.							
October.....	772	55	209	4.64	5.35	12,900	A.
November.....	1,900	214	573	12.7	14.17	34,100	B.
December.....	197	55	97.6	2.17	2.50	6,000	A.
January.....	92	42	58.8	1.31	1.51	3,620	A.
February.....	127	59	90.2	2.00	2.08	5,010	A.
March.....	609	97	268	5.96	6.87	16,500	A.
April.....	2,480	184	553	12.3	13.72	32,900	B.
May.....	674	124	206	4.58	5.28	12,700	A.
June.....	197	70	104	2.31	2.58	6,190	A.
July.....	227	47	76.9	1.71	1.97	4,730	A.
August.....	61	29	40.2	.893	1.03	2,470	A.
September.....	111	28	38.1	.847	.94	2,270	A.
The year.....	2,480	28	192	4.27	58.00	139,000	

NOTE.—Oct. 1-15, 1915, mean discharge, 286 second-feet; run-off, 8,510 acre-feet. Maximum discharge during period of record, 4,370 second-feet Nov. 19, 1911; minimum discharge, 21 second-feet for 22 days in August and September, 1910, and Sept. 3-4, 1911.

Yearly discharge of South Fork of Snoqualmie River near Garcia.

Year ending September 30.	Discharge in second feet.					Annual run-off.		
	Maxi- mum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
			Mean.					Month.
1911.....	3,770	21	41.2	Aug.....	279	6.20	84.11	202,000
1912.....	4,370	30	65.3	Mar.....	291	6.47	88.09	212,000
1913.....	2,220	33	72.5	Aug.....	303	6.73	91.25	219,000
1914.....	2,720	30	42.4	Aug.....	296	6.58	89.18	214,000
1915.....	2,480	28	38.1	Sept.....	192	4.27	58.00	139,000
The period.	4,370	21	38.1	Sept., 1915.	272	6.05	82.13	197,000

SOUTH FORK OF SNOQUALMIE RIVER AT NORTH BEND (39).

At Northern Pacific Railway bridge at North Bend, 2½ miles, by river, above mouth, in King County, prior to October 1, 1916; at Cooper ranch, half a mile south of North Bend, and 3½ miles, by river, above mouth thereafter. Staff gage used prior to September 1, 1912; water-stage recorder (Pl. IV, A) thereafter.

Drainage area, 84 square miles; measured on topographic maps.

Monthly discharge of South Fork of Snoqualmie River at North Bend.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907.							
July 21-31.....	166	152	154	1.83	0.75	3,360	C.
August.....	288	128	171	2.04	2.35	10,500	C.
September.....	374	128	176	2.10	2.34	10,500	C.
The period.....						24,400	

Monthly discharge of South Fork of Snoqualmie River at North Bend—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907-8.							
October.....	140	113	121	1.44	1.66	7,440	C.
November.....		180	417	4.96	5.53	24,800	C.
December.....		248	596	7.10	8.19	36,600	C.
January.....	510	212	361	4.30	4.96	22,200	C.
February.....	585	180	304	3.62	3.90	17,500	C.
March.....			900	10.7	12.34	55,300	D.
April.....			700	8.33	9.29	41,700	D.
May.....			800	9.52	10.98	49,200	D.
June.....			900	10.7	11.94	53,600	D.
July.....	890	212	497	5.92	6.82	30,600	C.
August.....	288	117	168	2.00	2.31	10,300	C.
September.....	140	77	109	1.30	1.45	6,490	C.
The year.....		77	490	5.83	79.37	356,000	
1908-9.							
October.....	950	68	220	2.62	3.02	13,500	C.
November.....	1,420	152	526	6.23	6.98	31,300	C.
December.....	1,070	230	416	4.93	5.71	25,600	C.
January.....	1,210	268	518	6.17	7.11	31,900	C.
February.....	950	248	423	5.04	5.25	23,500	C.
March.....	487	330	378	4.50	5.19	23,200	C.
April.....	950	330	475	5.66	6.32	28,300	C.
May.....	1,210	487	705	8.39	9.67	43,300	C.
June.....	1,960	464	807	9.61	10.72	48,000	C.
July.....	535	152	312	3.72	4.29	19,200	C.
August.....	152	86	109	1.30	1.50	6,700	C.
September.....	830	77	152	1.81	2.02	9,040	C.
The year.....	1,960	68	419	4.99	67.78	304,000	
1909-10.							
October.....	230	140	184	2.19	2.52	11,300	C.
November.....			1,400	16.7	18.63	83,300	D.
December.....	1,730	198	508	6.05	6.98	31,200	C.
January.....	1,210	144	341	4.06	4.68	21,000	C.
February.....	900	144	288	3.43	3.57	16,000	C.
March.....	2,710	406	1,120	13.3	15.33	68,900	C.
April.....	1,570	426	717	8.54	9.53	42,700	C.
May.....	1,730	386	609	7.25	8.36	37,400	C.
June.....	515	160	270	3.21	3.58	16,100	C.
July.....	169	101	128	1.52	1.75	7,870	C.
August.....	95	79	84.8	1.01	1.16	5,210	C.
September.....	136	71	76.8	.914	1.02	4,570	C.
The year.....		71	477	5.68	77.11	346,000	
1910-11.							
October.....	2,890	160	574	6.83	7.87	35,300	C.
November.....	4,440	220	929	11.1	12.38	55,300	B.
December.....	840	242	456	5.43	6.26	28,000	A.
January.....	1,140	220	388	4.62	5.33	23,900	A.
February.....	304	178	213	2.54	2.64	11,800	A.
March.....	725	169	348	4.14	4.77	21,400	A.
April.....	900	266	412	4.90	5.47	24,500	A.
May.....	1,080	515	708	8.43	9.72	43,500	A.
June.....	1,080	278	546	6.50	7.25	32,500	A.
July.....	318	121	213	2.54	2.93	13,100	A.
August.....	121	89	104	1.24	1.43	6,400	A.
September.....	960	89	239	2.85	3.18	14,200	A.
The year.....	4,440	89	428	5.10	69.23	310,000	
1911-12.							
October.....	242	114	144	1.72	1.98	8,850	A.
November.....	4,740	114	973	11.6	12.94	57,900	B.
December.....	642	318	435	5.18	5.97	26,700	A.
January.....	2,450	266	739	8.80	10.14	45,400	B.
February.....	1,270	403	690	8.21	8.86	39,700	A.
March.....	428	266	311	3.70	4.27	19,100	A.
April.....	620	354	450	5.36	5.98	26,800	A.
May.....	1,550	480	842	10.0	11.53	51,800	A.
June.....	830	286	553	6.58	7.34	32,900	A.
July.....	354	131	223	2.65	3.06	13,700	A.
August.....	330	107	151	1.80	2.08	9,280	A.
September.....	454	114	185	2.20	2.46	11,000	A.
The year.....	4,740	107	473	5.63	76.61	343,000	

Monthly discharge of South Fork of Snoqualmie River at North Bend—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1912-13.							
October.....			201	2.39	2.76	12,400	C.
November.....		201	622	7.40	8.26	37,000	C.
December.....			300	3.57	4.12	18,400	D.
January.....			600	7.14	8.23	36,900	D.
February.....			530	6.31	6.57	29,400	C.
March.....			391	4.65	5.36	24,000	C.
April.....			550	6.55	7.31	32,700	D.
May.....			900	10.7	12.34	55,300	D.
June.....	1,520	575	849	10.1	11.27	50,500	A.
July.....	615	218	412	4.90	5.65	25,300	A.
August.....	218	117	157	1.87	2.16	9,650	A.
September.....	580	117	178	2.12	2.36	10,600	A.
The year.....		117	473	5.63	76.39	342,000	
1913-14.							
October.....	2,450	126	527	6.27	7.23	32,400	A.
November.....	752	268	499	5.94	6.63	29,700	A.
December.....	595	218	321	3.82	4.40	19,700	A.
January.....	2,450	218	732	8.71	10.04	45,000	A.
February.....	810	336	476	5.67	5.90	26,400	A.
March.....	1,080	442	693	8.25	9.51	42,600	A.
April.....	1,360	452	762	9.07	10.12	45,300	A.
May.....	1,080	475	710	8.45	9.74	43,700	A.
June.....	670	380	506	6.02	6.72	30,100	A.
July.....	380	180	258	3.07	3.54	15,900	A.
August.....	183	98	117	1.39	1.60	7,190	C.
September.....	358	88	163	1.94	2.16	9,700	C.
The year.....	2,450	88	480	5.71	77.59	348,000	
1914-15.							
October.....	952	120	321	3.82	4.40	19,700	B.
November.....	2,020	365	760	9.05	10.10	45,200	A.
December.....	417	202	271	3.23	3.72	16,700	A.
January.....	365	218	286	3.40	3.92	17,600	A.
February.....	327	242	292	3.48	3.62	16,200	A.
March.....	694	261	428	5.10	5.88	26,300	A.
April.....	2,050	351	659	7.85	8.76	39,200	A.
May.....	861	268	354	4.21	4.85	21,800	A.
June.....	392	186	244	2.90	3.24	14,500	A.
July.....	351	136	181	2.15	2.48	11,100	A.
August.....	136	93	110	1.31	1.51	6,760	A.
September.....	226	81	106	1.26	1.41	6,310	A.
The year.....	2,050	81	334	3.93	53.89	241,000	
1915-16.							
October.....	1,610	115	450	5.36	6.18	27,700	B.
November.....	1,730	291	644	7.67	8.56	38,300	B.
December.....	2,080	328	660	7.86	9.06	40,600	B.
January.....	635	241	342	4.07	4.69	21,000	B.
February.....	1,480	283	680	8.10	8.74	39,100	B.
March.....	2,630	364	961	11.4	13.14	59,100	B.
April.....	1,290	598	797	9.49	10.59	47,400	B.
May.....	1,480	694	967	11.5	13.26	59,500	B.
June.....	1,880	827	1,120	13.3	14.84	66,600	B.
July.....	1,640	477	798	9.50	10.95	49,100	B.
August.....	500	180	310	3.69	4.25	19,100	B.
September.....	316	138	184	2.19	2.44	10,900	B.
The year.....	2,630	115	659	7.85	106.70	478,000	
1916-17.							
October.....	306	115	141	1.68	1.94	8,670	A.
November.....	1,230	231	431	5.13	5.72	25,600	A.
December.....	612	243	358	4.26	4.91	22,000	A.
January.....	946	248	498	5.93	6.84	30,600	A.
February.....	1,250	313	603	7.18	7.48	33,500	A.
March.....	432	250	313	3.73	4.30	19,200	A.
April.....	1,170	330	665	7.92	8.84	39,600	A.
May.....	1,540	634	996	11.9	13.72	61,200	A.
June.....	2,010	925	1,380	16.4	18.30	82,100	A.
July.....	1,440	350	866	10.3	11.87	53,200	A.
August.....	344	141	225	2.63	3.09	13,800	A.
September.....	172	105	126	1.50	1.67	7,500	A.
The year.....	2,010	105	549	6.54	88.68	397,000	

Monthly discharge of South Fork of Snoqualmie River at North Bend—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....	249	91	125	1.49	1.72	7,690	A.
November.....	494	138	210	2.50	2.79	12,500	A.
December.....	5,100	341	2,050	24.4	28.13	126,000	A.
January.....	3,550	681	1,250	14.9	17.18	76,900	A.
February.....	1,410	425	745	8.87	9.24	41,400	A.
March.....	1,190	336	577	6.87	7.92	35,500	A.
April.....	1,110	576	776	9.24	10.31	46,200	A.
May.....	1,240	555	763	9.08	10.47	46,900	A.
June.....	1,040	343	670	7.98	8.90	39,900	A.
July.....	336	140	232	2.76	3.18	14,300	A.
August.....	476	137	246	2.93	3.38	15,100	A.
September.....	188	90	118	1.40	1.56	7,020	A.
The year.....	5,100	90	648	7.71	104.78	469,000	
1918-19.							
October.....	2,280	90	448	5.33	6.14	27,500	
November.....	911	352	546	6.50	7.25	32,500	
December.....	4,180	410	1,080	12.9	14.87	66,400	
January.....	4,500	358	1,070	12.7	14.64	65,800	
February.....	819	520	633	7.54	7.85	35,200	
March.....	819	425	544	6.48	7.47	33,400	
April.....	1,140	520	792	9.43	10.52	47,100	
May.....	1,960	662	979	11.7	13.49	60,200	
June.....	1,060	520	816	9.71	10.83	48,600	
July.....	539	178	350	4.17	4.81	21,500	
August.....	182	110	136	1.62	1.87	8,360	
September.....	291	93	122	1.45	1.62	7,260	
The year.....	4,500	90	627	7.46	101.36	454,000	

NOTE.—Maximum discharge during period of record occurred in November, 1909 (discharge not determined); minimum discharge, 68 second-feet, Oct. 10 and 11, 1908. Monthly mean discharge March to June 1908, estimated by comparison of record of total flow of Snoqualmie River with record of Yakima River at Cle Elum and ratio of South Fork to sum of discharge at the three forks, by months, during several years record. Mean discharge November, 1909, estimated by comparison of record of total flow of Snoqualmie River with record of Yakima River at Cle Elum and Cedar River near Ravensdale and ratio of South Fork to sum of discharge at the three forks. Mean discharge December, 1912, January, April, and May, 1913, estimated by comparison with record of flow of South Fork of Snoqualmie River near Garcia.

Yearly discharge of South Fork of Snoqualmie River at North Bend.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maxi- mum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1908.....		77	109	Sept.....	490	5.83	79.37	356,000
1909.....	1,960	68	109	Aug.....	419	4.99	67.78	304,000
1910.....		71	76.8	Sept.....	477	5.68	77.11	346,000
1911.....	4,440	89	104	Aug.....	428	5.10	69.23	310,000
1912.....	4,740	107	144	Oct.....	473	5.63	76.61	343,000
1913.....		117	157	Aug.....	473	5.63	76.39	342,000
1914.....	2,450	88	117	Aug.....	480	5.71	77.59	348,000
1915.....	2,050	81	106	Sept.....	334	3.98	53.89	241,000
1916.....	2,630	115	184	Sept.....	659	7.85	106.70	478,000
1917.....	2,010	105	126	Sept.....	549	6.54	88.68	397,000
1918.....	5,100	90	118	Sept.....	648	7.71	104.78	469,000
1919.....	4,500	90	122	Sept.....	627	7.46	101.36	454,000
The period.....		68	76.8	Sept.,1910	505	6.01	81.62	366,000

TOKUL CREEK NEAR SNOQUALMIE (40).

Staff gage 600 feet below dam site, 600 feet above bridge, $1\frac{3}{4}$ miles above junction with Snoqualmie River, and 2 miles north of Snoqualmie, in King County.

Monthly discharge of Tokul Creek near Snoqualmie.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1907.					
July 21-31.....	22	22	22.0	480	C.
August.....	33	19	23.6	1,450	C.
September.....	33	22	25.5	1,520	C.
The period.....				3,450	
1907-8.					
October.....	29	22	24.3	1,490	C.
November.....		29	75.7	4,500	C.
February.....	179	56	115	6,620	C.
July.....	44	27	34.5	2,120	C.
August.....	35	23	25.0	1,540	C.
September.....	23	19	21.3	1,270	D.
1908-9.					
October.....	31	23	25.7	1,580	C.
November.....	151	35	71.1	4,230	C.
December.....	214	76	109	6,700	C.
January.....	312	158	204	12,500	D.
February.....	266	130	227	12,600	D.
March.....	224	106	175	10,800	C.
April.....	118	76	96.2	5,720	D.
May.....	118	70	88.1	5,420	C.
June.....	64	23	39.1	2,330	C.
July.....	27	16	19.9	1,220	D.
August.....	19	16	16.3	1,000	D.
September.....	31	13	17.9	1,070	D.
The year.....	312	13	90.0	65,200	
1909-10.					
October.....	27	19	22.1	1,360	D.
December.....	368	158	228	14,000	D.
January.....	277	106	161	9,900	D.
February.....		137	230	12,800	D.
March.....		228	359	22,100	D.
April.....	277	112	198	11,800	D.
May.....	144	76	100	6,150	C.
June.....	88	31	46.7	2,780	C.
July.....	54	23	26.3	1,620	D.
August.....	23	19	20.0	1,230	D.
September.....	44	16	21.6	1,290	C.
1910-11.					
October.....	235	39	130	7,990	C.
November.....		112	348	20,700	D.
December.....	256	130	186	11,400	D.
January.....	256	151	199	12,200	D.
February.....	193	124	157	8,720	D.
March.....	172	106	128	7,870	C.
April.....	112	46	86.2	5,130	C.
May.....	347	44	172	10,600	D.
June.....	112	35	54.7	3,250	C.
July.....	39	27	32.4	1,990	C.
August.....	27	16	20.7	1,270	D.
September.....	144	16	45.5	2,710	C.
The year.....		16	130	93,800	
1911-12.					
October.....	31	27	28.1	1,730	C.
November.....	259	27	131	7,800	C.
December.....	245	147	196	12,100	D.
January.....	238	104	159	9,780	D.
February.....	224	116	164	9,430	D.
March.....	110	68	82.0	5,040	C.
April.....	110	74	88.9	5,290	C.
May.....	92	62	75.3	4,630	C.
June.....	80	57	61.1	3,640	C.
July.....	104	47	63.7	3,920	C.
August.....	147	43	63.5	3,900	C.
September.....	140	57	77.4	4,610	C.
The year.....	259	27	98.9	71,900	

Monthly discharge of Tokul Creek near Snoqualmie—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1912-13.					
October.....	140	57	82.4	5,070	C.
November.....	336	86	201	12,000	C.
December.....	315	92	137	8,420	C.
January.....		92	205	12,600	D.
February.....	231	92	142	7,890	D.
March.....	182	86	117	7,190	C.
April.....	147	57	93.1	5,540	C.
May.....	134	52	67.5	4,150	C.
June.....	68	47	52.9	3,150	C.
July.....	74	42	54.3	3,340	C.
August.....	42	33	36.8	2,260	C.
September.....	52	33	42.8	2,550	C.
The year.....		33	102	74,200	
1913-14.					
October.....	217	37	104	6,400	C.
November.....	224	68	150	8,930	D.
December.....	217	57	103	6,330	C.
January.....	350	80	211	13,000	D.
February.....	182	104	141	7,830	C.
March.....	189	77	102	6,270	C.
April.....	189	68	91.2	5,430	C.
May.....	84	44	54.1	3,330	C.
June.....	84	39	53.5	3,180	C.
July.....	49	30	36.0	2,210	C.
August.....	30	24	25.9	1,590	C.
September.....	42	24	28.3	1,680	C.
The year.....	350	24	91.5	66,200	

NOTE.—Mean discharge for October, 1914, 49.8 second feet; run-off, 3,060 acre-feet. Maximum discharge during period of record probably occurred in November, 1909 (discharge not determined); minimum discharge, 13 second-feet Sept. 16-20, 1909.

Yearly discharge of Tokul Creek near Snoqualmie.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.	
	Maximum day.	Minimum.		Annual mean.			
		Day.	Calendar month.				
			Mean.				Month.
1909.....	312	13	16.3	Aug.....	90.0	65,200	
1911.....		16	20.7	Aug.....	130	93,800	
1912.....	259	27	28.1	Oct.....	98.9	71,900	
1913.....		33	36.8	Aug.....	102	74,200	
1914.....	350	24	25.9	Aug.....	91.5	66,200	
The period.....		13	16.3	Aug., 1909.	102	74,300	

PILCHUCK CREEK NEAR GRANITE FALLS (41).

Staff gage at highway bridge a quarter of a mile above outlet of Bosworth Lake, 1 mile above outlet of Swartz Lake, and 2 miles southeast of Granite Falls, in Snohomish County.

Monthly discharge of Pilchuck Creek near Granite Falls.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
June.....	389	97	172	10,200	A.
July.....	167	54	91.0	5,600	A.
August.....	154	42	53.4	3,280	A.
September.....	2,150	42	239	14,200	A.
October 1-12.....	70	56	61.6	1,470	A.
The period.....				34,800	

STILAGUAMISH RIVER BASIN.

SOUTH FORK OF STILAGUAMISH RIVER NEAR SILVERTON (42).

Staff gage one-eighth mile above Silverton ranger station, one-fourth mile below Martin Creek, and 2½ miles below Silverton, in Snohomish County.

Drainage area, 45.4 square miles; measured on topographic maps.

Monthly discharge of South Fork of Stilaguamish River near Silverton.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910.							
September.....	188	47	70.5	1.55	1.73	4,200	A.
1910-11.							
October.....	4,440	126	787	17.3	19.94	48,400	A.
November.....	5,720	188	1,010	22.2	24.77	60,100	A.
December.....	2,980	155	681	15.0	17.29	41,900	B.
January.....	1,580	47	358	7.89	9.10	22,000	C.
February.....	101	80	86.8	1.91	1.99	4,820	A.
March.....	799	62	250	5.51	6.35	15,400	A.
April.....	799	188	324	7.36	8.21	19,900	A.
May.....	1,430	422	674	14.8	17.06	41,400	A.
June.....	1,170	225	533	11.7	13.05	31,700	A.
July.....	556	155	323	7.11	8.20	19,900	A.
August.....	188	62	93.2	2.05	2.36	5,730	A.
September.....	799	62	260	5.73	6.39	15,500	A.
The year.....	5,720	47	451	9.93	134.71	327,000	
1911-12.							
October.....	713	47	125	2.75	3.17	7,690	A.
November.....	5,600	47	1,130	24.9	27.78	67,200	B.
December.....	1,340	80	380	8.37	9.65	23,400	A.
January.....	1,520	101	572	12.6	14.53	35,200	A.
February.....	1,900	126	495	10.9	11.76	28,500	A.
March.....	312	80	127	2.80	3.23	7,810	A.
April.....	364	126	244	5.37	5.99	11,500	A.
May.....	1,080	225	553	12.2	14.07	31,000	C.
June.....	630	188	371	8.17	9.12	22,100	C.
July.....	560	80	239	5.28	6.06	14,700	C.
August.....	570	60	190	4.19	4.83	11,700	C.
September.....	950	50	188	4.14	4.62	11,200	D.
The year.....	5,600	47	383	8.44	114.81	278,000	
1912-13.							
October.....	364	101	180	3.96	4.56	11,100	A.
November ^a			400	8.81	9.83	23,800	.....
December.....	422	80	209	4.60	5.30	12,900	A.
January.....	125	62	89.2	1.96	2.26	5,480	A.
February.....	155	101	122	2.69	2.80	6,780	D.
March.....	360	101	189	4.16	4.80	11,600	D.
April.....	632	188	389	8.57	9.56	23,100	A.
May.....	1,340	266	741	16.3	18.79	45,600	A.
June.....	1,340	556	744	16.4	18.30	41,300	A.
July.....	799	422	588	13.0	14.99	36,200	A.
August.....	486	155	253	5.57	6.42	15,600	C.
September.....	312	62	178	3.92	4.37	10,600	C.
The year.....	1,340	62	341	7.51	101.98	247,000	

^a Estimated by comparison with records of flow of adjacent streams.

Monthly discharge of South Fork of Stilaguamish River near Silverton—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1913-14.							
October.....	422	126	240	5.29	6.10	14,800	A.
November ^b			600	13.2	14.73	35,700	C.
December ^b			300	6.61	7.62	18,400	D.
January.....	4,820	155	784	17.3	19.94	48,200	B.
February.....	1,520	101	298	6.56	6.83	16,600	A.
March.....	1,520	155	544	12.0	13.83	33,400	A.
April ^b			500	11.0	12.27	29,800	C.
May.....	713	155	418	9.21	10.62	25,700	A.
June.....	845	312	540	11.9	13.28	32,100	A.
July.....	422	90	207	4.56	5.26	12,700	A.
August.....	101	47	74.0	1.63	1.88	4,550	A.
September.....		35	331	7.29	8.13	19,700	B.
The year.....		35	403	8.88	120.49	292,000	
1914-15.							
October.....	2,000	99	381	8.39	9.67	23,400	A.
November.....	2,520	262	676	14.9	16.62	40,200	A.
December.....	308	37	129	2.84	3.27	7,930	A.
January.....	518	76	196	4.32	4.98	12,100	A.
February.....	360	140	216	4.76	4.96	12,000	A.
March.....	1,170	137	354	7.80	8.99	21,800	A.
April.....	3,450	154	575	12.7	14.17	34,200	A.
May.....	1,000	125	264	5.81	6.70	16,200	A.
June.....	308	112	154	3.39	3.78	9,160	A.
July.....	360	59	116	2.56	2.95	7,130	A.
August.....	59	31	39.8	.877	1.01	2,450	A.
September.....	154	29	43.4	.956	1.07	2,580	A.
The year.....	3,450	29	261	5.75	78.17	189,000	
1915-16.							
October.....	3,810	48	493	10.9	12.57	30,300	A.
November.....			427	9.41	10.50	25,400	C.
December.....	4,440	98	666	14.7	16.95	41,000	B.
January.....	2,310	60	170	3.74	4.31	10,500	A.
February.....	3,210	60	612	13.5	14.56	35,200	A.
March.....	3,210	98	643	14.2	16.37	39,500	A.
April.....	1,000	368	633	13.9	15.51	37,700	A.
May.....	1,000	485	693	15.3	17.64	42,600	A.
June.....	1,170	485	770	17.0	18.97	45,800	A.
July.....	1,000	306	628	13.8	15.91	38,600	A.
August.....	316	138	217	4.78	5.51	13,300	A.
September.....	485	77	185	4.07	4.54	11,000	A.
The year.....	4,440	48	511	11.3	153.34	371,000	
1916-17.							
October.....	770	37	128	2.82	3.25	7,870	B.
November.....		138	502	11.1	12.38	29,900	B.
December.....		98	206	4.54	5.23	12,700	B.
January.....	1,170	92	247	5.44	6.27	15,200	B.
February.....	920	116	380	8.37	8.72	21,100	A.
March.....	233	63	126	2.78	3.20	7,750	A.
April.....		224	510	11.2	12.50	30,300	C.
May.....			762	16.8	19.37	46,900	C.
June.....	2,000		991	21.8	24.32	59,000	B.
July.....	1,340	368	739	17.4	20.06	48,500	A.
August.....	363	116	253	5.57	6.42	15,600	B.
September.....	396	92	189	4.16	4.64	11,200	B.
The year.....		37	423	9.32	126.36	306,000	
1917.							
October.....	518	56	200	4.41	5.08	12,300	B.
November.....		72	217	4.78	5.33	12,900	B.
December 1-14.....			874	19.3	10.05	24,300	B.

^b Estimated by comparison with record of flow of South Fork of Stilaguamish River at Granite Falls.

NOTE.—Maximum discharge during period of record, 5,720 second-feet Nov. 20, 1910; minimum discharge, 29 second-feet Sept. 7, 23-26, 29-30, 1915. Daily discharge above 800 second-feet prior to Sept. 30, 1914, has been revised in this report, using the rating curve, well defined below 2,000 second-feet, which was used after that date and which was applicable for entire period of record.

Yearly discharge of South Fork of Stilaguamish River near Silverton.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1911.....	5,720	47	86.8	Feb.....	451	9.93	134.71	327,000
1912.....	5,600	47	125	Oet.....	383	8.44	114.81	278,000
1913.....	1,340	62	89.2	Jan.....	341	7.51	101.98	247,000
1914.....		35	74.0	Aug.....	403	8.88	120.49	292,000
1915.....	3,450	29	39.8	Aug.....	261	5.75	78.17	189,000
1916.....	4,440	48	170	Jan.....	511	11.3	153.34	371,000
1917.....		37	126	Mar.....	423	9.32	126.36	306,000
The period.	5,720	29	39.8	Aug., 1915.	396	8.73	118.55	287,000

SOUTH FORK OF STILAGUAMISH RIVER AT GRANITE FALLS (43).

Chain gage at highway bridge 400 feet below Canyon Creek and 1 mile north of Granite Falls, in Snohomish County.

Drainage area, 182 square miles; measured on topographic maps.

Monthly discharge of South Fork of Stilaguamish River at Granite Falls.

Month.	Discharge in second-feet.				Run-off.		Accu- raey.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911.							
June 19-30.....	2,620	910	1,370	7.53	3.36	32,600	B.
July.....	1,470	435	892	4.90	5.65	54,800	B.
August.....	535	200	278	1.53	1.76	17,100	B.
September.....	3,100	170	816	4.48	5.00	48,600	B.
October.....	2,740	170	433	2.38	2.74	26,600	B.
The period.....						180,000	
1913-14.							
October.....	9,250	315	1,440	7.91	9.12	88,500	B.
November.....	10,000	465	2,180	12.0	13.39	130,000	B.
December.....	2,430	297	1,020	5.60	6.46	62,700	B.
January.....	10,400	825	2,350	12.9	14.87	144,000	B.
February.....	3,700	540	1,290	7.09	7.38	71,600	B.
March.....	5,350	1,010	1,740	9.56	11.02	107,000	B.
April.....	3,250	972	1,750	9.62	10.73	104,000	B.
May.....	3,250	935	1,310	7.20	8.30	80,600	B.
June.....	6,700	595	1,380	7.58	8.46	82,100	B.
July.....	935	231	522	2.87	3.31	32,100	B.
August.....	315	136	201	1.10	1.27	12,400	B.
September.....	4,000	136	888	4.88	5.44	52,800	B.
The year.....	10,400	136	1,340	7.36	99.75	968,000	
1914-15.							
October.....	5,360	396	1,260	6.92	7.98	77,500	A.
November.....	4,560	536	2,110	11.6	12.94	126,000	A.
Deeember.....	2,160	188	600	3.30	3.80	36,900	A.
January.....	3,170	440	1,110	6.10	7.03	68,200	A.
February.....	2,040	463	962	5.29	5.51	53,400	A.
Mareh.....	4,280	396	1,180	6.48	7.47	72,600	A.
April.....	5,120	285	1,120	6.15	6.86	66,600	B.
May.....	1,730	382	743	4.08	4.70	45,700	B.
June.....	798	206	397	2.18	2.43	23,600	A.
July.....	1,730	152	407	2.24	2.58	25,000	A.
August.....	221	72	125	.687	.79	7,690	B.
September.....	1,040	64	173	.951	1.06	10,300	B.
The year.....	5,360	64	847	4.65	63.15	613,000	

NOTE.—Mean discharge for October, 1915, 1,360 second-feet; discharge per square mile, 7.47 second-feet; depth in inches on drainage area, 8.61; run-off in acre-feet, 83,600. Maximum discharge during period of record, 11,700 second-feet Jan. 6, 1914; minimum discharge, 64 second-feet Sept. 28, 1915.

DEER CREEK AT OSO (44).

Water-stage recorder (PL. IV. B) $1\frac{1}{2}$ miles above Oso and junction with North Fork of Stillaguamish River, in Snohomish County.

Drainage area, 84 square miles; measured on topographic maps.

Monthly discharge of Deer Creek at Oso.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1916-17.							
August 11-31.....	111	54	78.3	0.932	0.73	3,260	A.
September.....	591	49	120	1.43	1.60	7,140	A.
1917-18.							
October.....	1,030	57	183	2.18	2.51	11,300	A.
November.....	2,540	104	408	4.86	5.42	24,300	A.
December.....	.....	266	2,170	25.8	29.74	133,000	C.
January.....	2,450	396	1,110	13.2	15.22	68,200	A.
February.....	2,200	.....	634	7.55	7.86	35,200	B.
March.....	3,040	104	618	7.36	8.48	38,000	B.
April.....	1,100	272	535	6.37	7.11	31,800	A.
May.....	991	302	564	6.71	7.74	34,700	A.
June.....	827	120	374	4.45	4.96	22,300	A.
July.....	398	58	103	1.23	1.42	6,330	A.
August.....	874	37	182	2.17	2.50	11,200	A.
September.....	73	31	44.3	.527	.59	2,640	B.
The year.....	.....	31	579	6.89	93.55	419,000	
1918-19.							
October.....	4,980	33	651	7.75	8.94	40,000	A.
November.....	2,500	210	700	8.33	9.29	41,700	A.
December.....	5,530	212	1,090	13.0	14.99	67,000	A.
January.....	.....	.....	850	10.1	11.64	52,300	D.
February.....	1,790	174	470	5.60	5.83	26,100	A.
March.....	1,140	208	430	5.12	5.90	26,400	A.
April.....	2,500	329	832	9.90	11.04	49,500	A.
May.....	2,220	339	711	8.46	9.75	43,700	A.
June.....	502	161	350	4.17	4.65	20,800	A.
July.....	369	54	126	1.50	1.73	7,750	A.
August.....	62	32	41.0	.488	.56	2,520	A.
September.....	554	27	58.1	.692	.77	3,460	A.
The year.....	5,530	27	526	6.26	85.09	381,000	

NOTE.—Maximum discharge during period of record, 9,300 second-feet, Dec., 18, 1917; minimum discharge, 27 second-feet Sept. 29 and part of Sept. 30, 1919.

SKAGIT RIVER BASIN.

SKAGIT RIVER AT REFLECTOR BAR, NEAR MARBLEMOUNT (45).

At Reflector Bar ranger station, just below mouth of Canyon Diablo, three-fourths mile above Stetattle Creek, $1\frac{1}{2}$ miles below Thunder Creek, and 23 miles by trail northeast of Marblemount, in Whatcom County. Staff gage used prior to April 13, 1914; water-stage recorder used thereafter.

Monthly discharge of Skagit River at Reflector Bar, near Marblemount.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1913-14.					
October.....			2,800	172,000	C.
November.....			3,000	179,000	C.
December.....	3,000	1,210	1,830	113,000	A.
January.....	12,800	1,180	3,590	221,000	A.
February.....	1,820	1,110	1,270	70,500	A.
March.....	4,120	1,670	2,800	172,000	A.
April.....	7,740	2,390	5,350	318,000	A.
May.....	14,400	5,480	9,180	564,000	A.
June.....	13,600	5,760	8,490	505,000	B.
July.....	9,560	3,320	6,010	370,000	B.
August.....	3,800	2,190	3,200	197,000	B.
September.....	3,200	1,290	1,960	117,000	B.
The year.....	14,400	1,110	4,140	3,000,000	
1914-15.					
October.....	3,200	1,240	1,910	117,000	A.
November.....	5,630	2,560	3,840	228,000	A.
December.....	3,500	1,060	1,730	106,000	A.
January.....	1,110	739	899	55,300	A.
February.....	815	739	769	42,700	A.
March.....	2,920	824	1,560	95,900	A.
April.....	10,700	3,020	5,200	309,000	A.
May.....	6,260	3,500	4,520	278,000	A.
June.....	5,840	2,650	3,920	233,000	A.
July.....	5,060	2,560	3,590	221,000	A.
August.....	4,230	2,650	3,480	214,000	A.
September.....	2,740	962	1,500	89,300	A.
The year.....	10,700	739	2,750	1,990,000	
1915-16.					
October.....	6,160	794	1,830	113,000	A.
November.....	4,410	1,270	2,030	121,000	A.
December.....	3,620	1,160	1,870	115,000	A.
January ^a			860	52,900	C.
February ^a			1,170	67,300	C.
March ^a			1,720	106,000	C.
April ^a			3,020	180,000	C.
May ^a			8,210	505,000	B.
June.....	29,000	8,840	15,600	928,000	A.
July.....	15,400	5,960	10,400	640,000	A.
August.....	7,020	2,920	4,760	293,000	A.
September.....	5,820	1,670	2,740	163,000	B.
The year.....	29,000		4,520	3,280,000	
1916-17.					
October ^b			1,230	75,600	B.
November ^b			1,390	82,700	B.
December ^b	1,130		930	57,200	C.
January ^b			910	56,000	C.
February ^b			1,250	69,400	C.
March ^b			925	56,900	C.
April ^b			2,000	119,000	C.
May ^b	18,400		8,180	503,000	B.
June.....	18,800	8,340	12,300	732,000	A.
July.....	12,000	4,020	8,990	553,000	A.
August.....	4,720	2,990	3,800	234,000	A.
September.....	2,810	1,540	2,220	132,000	A.
The year.....	18,800		3,690	2,670,000	

^a Monthly discharge January to April estimated by hydrographic comparison with record of flow of Skagit River near Sedro Woolley; Baker River below Anderson Creek, near Concrete; Sauk River at Darrington and from study of weather records. Mean discharge for May based on estimate of flow for period May 1-15 determined from the hydrographic comparison.

^b Monthly discharge for parts of October to December and May and for most of January to April estimated by hydrographic comparison with record of flow of Skagit River near Sedro Woolley; Baker River below Anderson Creek, near Concrete; and Sauk River at Darrington and from study of weather records.

Monthly discharge of Skagit River at Reflector Bar, near Marblemount—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1917-18.					
October.....	4,020	813	1,580	97,200	A.
November.....	4,970	917	1,840	109,000	A.
December.....	27,200	1,120	5,090	313,000	B.
January.....	31,200	2,230	7,220	444,000	B.
February.....	3,880	1,620	2,530	141,000	A.
March.....	3,760	1,150	1,980	122,000	A.
April.....	8,440	3,110	5,270	314,000	A.
May.....	13,300	4,810	8,380	515,000	A.
June.....	21,800	7,000	12,700	756,000	A.
July.....	9,380	4,570	6,620	407,000	A.
August.....	5,560	2,600	3,700	228,000	A.
September.....	3,320	1,520	2,420	144,000	A.
The year.....	31,200	813	4,960	3,590,000	
1918-19.					
October.....	6,360	1,260	2,370	146,000	A.
November.....	2,800	1,360	1,960	117,000	A.
December.....		1,660	3,330	205,000	A.
January.....	3,990	1,250	2,100	129,000	A.
February.....	1,920	1,110	1,410	78,300	A.
March.....		922	1,220	75,000	A.
April.....	8,750	3,220	5,150	306,000	A.
May.....	24,200	5,680	10,300	633,000	A.
June.....	17,700	8,220	12,000	714,000	A.
July.....	13,100	5,760	9,320	573,000	A.
August.....	6,360	2,860	4,510	277,000	A.
September.....	3,940	1,260	2,340	139,000	A.
The year.....	24,200	922	4,680	3,390,000	

Yearly discharge of Skagit River at Reflector Bar, near Marblemount.

Year ending September 30.	Discharge in second-feet.					Run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1914.....	14,400	1,110	1,270	Feb.....	4,140	3,000,000
1915.....	10,700	739	769	Feb.....	2,750	1,990,000
1916.....	29,000		860	Jan.....	4,520	3,280,000
1917.....	18,800		910	Jan.....	3,690	2,670,000
1918.....	31,200	813	1,580	Oct.....	4,960	3,590,000
1919.....	24,200	922	1,220	Mar.....	4,680	3,390,000
The period.....	31,200		769	Feb., 1915.	4,120	2,980,000

SKAGIT RIVER NEAR MARBLEMOUNT (46).

Staff gage 1 mile above Goodell Creek, 6½ miles below Stetattle Creek, and 16 miles above Marblemount, in Whatcom County.

Drainage area, 1,150 square miles (revised); area in Canada 390 square miles;⁵ area in United States measured on Washington National Forest maps.

⁵ White, A. V., Conservation Commission of Canada, Water powers of British Columbia, p. 483.

Monthly discharge of Skagit River near Marblemount.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1908-9.							
October.....			1,380	1.20	1.38	84,800	D.
November.....			3,600	3.13	3.49	214,000	D.
December.....			1,540	1.34	1.54	94,700	D.
January.....	4,260	1,560	1,980	1.72	1.98	122,000	B.
February.....	1,910	1,350	1,590	1.38	1.44	88,300	B.
March.....	3,020	1,290	1,740	1.51	1.74	107,000	B.
April.....	3,830	2,320	3,020	2.63	2.93	180,000	B.
May.....	13,500	3,280	7,270	6.32	7.29	447,000	B.
June.....	25,100	8,360	14,100	12.3	13.72	839,000	B.
July.....	13,500	5,510	8,170	7.10	8.19	502,000	B.
August.....	9,260	2,430	3,960	3.44	3.97	243,000	B.
September.....	4,410	1,810	2,820	2.45	2.73	168,000	B.
The year.....			4,270	3.71	50.40	3,090,000	
1909-10.							
October.....	3,550	1,560	2,150	1.87	2.16	132,000	B.
November.....	40,500	1,560	7,880	6.85	7.64	469,000	B.
December.....	18,400	1,490	4,250	3.70	4.27	261,000	B.
January.....	4,860	1,240	2,050	1.73	2.05	126,000	B.
February.....	2,710	1,240	1,660	1.44	1.50	92,200	B.
March.....	9,020	1,680	4,660	4.05	4.67	287,000	B.
April.....	24,400	3,420	8,060	7.01	7.82	480,000	B.
May.....	25,100	8,340	14,800	12.9	14.87	910,000	B.
June.....	19,100	6,470	10,400	9.04	10.09	619,000	B.
July.....	12,300	5,540	8,270	7.19	8.29	508,000	B.
August.....	6,280	1,840	3,890	3.38	3.90	239,000	B.
September.....	3,420	1,450	2,160	1.88	2.10	129,000	B.
The year.....	40,500	1,240	5,870	5.10	69.36	4,250,000	
1910-11.							
October.....	15,300	2,910	5,950	5.17	5.96	366,000	B.
November.....	20,100	3,210	6,600	5.74	6.40	393,000	B.
December.....	3,970	2,170	2,940	2.56	2.95	181,000	B.
January.....	2,350	1,240	1,690	1.47	1.70	104,000	B.
February.....	1,240	870	1,020	.887	.92	56,600	B.
March.....	4,110	920	1,880	1.63	1.88	116,000	B.
April.....	6,870	2,350	3,640	3.17	3.54	217,000	B.
May.....	16,500	5,020	7,850	6.83	7.87	483,000	B.
June.....	24,400	8,340	13,900	12.1	13.50	827,000	B.
July.....	11,000	5,360	7,890	6.86	7.91	485,000	A.
August.....	5,900	2,980	3,880	3.37	3.88	239,000	A.
September.....	4,700	1,490	2,890	2.51	2.80	172,000	A.
The year.....	24,400	870	5,030	4.37	59.31	3,640,000	
1911-12.							
October.....	1,680	920	1,250	1.09	1.26	76,900	A.
November.....	4,550	880	1,880	1.63	1.82	112,000	A.
December.....	2,230	1,170	1,620	1.41	1.63	99,600	A.
January.....	3,910	970	1,560	1.36	1.57	95,900	A.
February.....	2,840	1,490	2,270	1.97	2.12	131,000	A.
March.....	1,780	920	1,210	1.05	1.21	74,400	A.
April.....	3,580	2,110	2,890	2.51	2.80	172,000	A.
May.....	17,800	3,120	9,290	8.08	9.32	571,000	A.
June.....	15,300	6,280	10,900	9.48	10.58	649,000	A.
July.....	7,070	3,740	5,650	4.91	5.66	347,000	A.
August.....	4,860	1,890	3,570	3.10	3.57	220,000	A.
September.....	2,470	1,170	1,680	1.46	1.63	100,000	A.
The year.....	17,800	880	3,650	3.17	43.17	2,650,000	
1912-13.							
October.....	2,110	920	1,230	1.07	1.23	75,600	A.
November.....	5,900	1,030	2,210	1.92	2.14	132,000	A.
December.....	2,230	1,240	1,530	1.33	1.53	94,100	A.
January.....	1,400	920	1,090	.948	1.09	67,000	A.
February.....	3,970	820	1,520	1.32	1.38	84,400	A.
March.....	2,000	1,240	1,520	1.32	1.52	93,500	A.
April.....	8,560	1,320	4,040	3.51	3.92	240,000	A.
May.....	19,100	3,270	9,870	8.58	9.89	607,000	A.
June.....	25,800	10,500	15,900	13.8	15.40	946,000	A.
July.....	12,600	5,190	8,950	7.78	8.97	550,000	A.
August.....	7,270	2,660	4,480	3.90	4.50	275,000	A.
September.....	14,100	1,990	3,430	2.98	3.32	204,000	A.
The year.....	25,800	820	4,650	4.04	54.89	3,370,000	

Monthly discharge of Skagit River near Marblemount—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1913-14.							
October.....	7,070	1,320	2,860	2.49	2.87	176,000	A.
November.....	6,470	1,890	3,070	2.67	2.98	183,000	A.
December.....	3,150	1,240	1,860	1.62	1.87	114,000	A.
January.....	18,100	1,240	4,080	3.55	4.09	251,000	A.
February.....	2,210	1,240	1,430	1.24	1.29	79,400	A.
March.....	5,020	1,890	3,080	2.68	3.09	189,000	A.
April.....	8,790	2,430	5,900	5.13	5.72	351,000	A.
May 1-23.....	17,200	5,900	10,600	9.22	7.89	484,000	A.
The period.....						1,830,000	

NOTE.—Maximum discharge during period of record, 63,500 second-feet during early morning Nov. 29, 1909; minimum discharge, 820 second-feet at about 8 a. m. Feb. 6 and 8, 1913.

Monthly discharge October to December, 1908, estimated by comparison with record of flow of Skagit River near Sedro Woolley.

Yearly discharge of Skagit River near Marblemount.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maxi- mum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1909.....			1,380	Oct.....	4,270	3.71	50.40	3,090,000
1910.....	40,500	1,240	1,660	Feb.....	5,870	5.10	69.36	4,250,000
1911.....	24,400	870	1,020	Feb.....	5,030	4.37	59.31	3,640,000
1912.....	17,800	880	1,210	Mar.....	3,650	3.17	43.17	2,650,000
1913.....	25,800	820	1,090	Jan.....	4,650	4.04	54.89	3,370,000
The period...	40,500	820	1,020	Feb., 1911.	4,690	4.08	55.43	3,400,000

SKAGIT RIVER NEAR SEDRO WOOLLEY (47).

Staff gage at Northern Pacific Railway bridge 1½ miles south of Sedro Woolley, 21 miles above mouth, and 32 miles below Baker River, in Skagit County.

Beatty's Slough carries from 1.5 per cent of total flow at low stages to 8 per cent at high stages. Amount determined at each visit of engineer and added to flow measured in main channel.

Drainage area, 2,970 square miles (revised); measured on General Land Office and British Columbia maps.

Monthly discharge of Skagit River near Sedro Woolley.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet	
1908.							
May.....	22,500	11,500	15,700	5.29	6.10	965,000	D.
June.....	47,000	14,800	26,000	8.75	9.76	1,550,000	D.
July.....	37,100	11,200	25,100	8.45	9.74	1,540,000	D.
August.....	13,500	6,580	10,500	3.54	4.08	646,000	D.
September.....	7,980	3,540	5,570	1.88	2.10	331,000	D.
The period.....						5,030,000	
1908-9.							
October.....	17,100	3,540	5,520	1.86	2.14	339,000	D.
November.....	92,600	4,630	18,700	6.30	7.03	1,110,000	D.
December.....	15,100	6,150	8,370	2.82	3.25	515,000	D.
January.....	26,800	5,350	10,600	3.57	4.12	652,000	D.
February.....	14,800	5,350	7,890	2.66	2.77	438,000	D.
March.....	10,100	5,350	6,360	2.14	2.47	391,000	D.
April.....	13,200	6,800	8,360	2.81	3.14	497,000	D.
May.....	27,200	7,980	14,600	4.92	5.67	898,000	D.
June.....	48,200	18,100	28,100	9.46	10.56	1,670,000	D.
July.....	25,600	12,400	17,900	6.03	6.95	1,100,000	D.
August.....	18,400	6,580	9,380	3.16	3.64	577,000	D.
September.....	10,900	5,160	7,300	2.46	2.74	434,000	D.
The year.....	92,600	3,540	11,900	4.01	54.48	8,620,000	
1909-10.							
October.....	12,100	5,160	7,010	2.36	2.72	431,000	D.
November.....	198,000	6,360	33,200	11.2	12.50	1,980,000	D.
December.....	93,600	9,570	23,600	7.95	9.16	1,450,000	B.
January.....	38,200	6,260	11,800	3.97	4.58	726,000	B.
February.....	15,700	5,970	9,220	3.10	3.23	512,000	B.
March.....	28,700	11,500	19,400	6.53	7.53	1,190,000	B.
April.....	55,700	11,900	22,800	7.68	8.57	1,360,000	B.
May.....	68,100	20,200	35,100	11.8	13.60	2,160,000	B.
June.....	49,200	16,600	24,900	8.38	9.35	1,480,000	B.
July.....	31,600	14,000	19,900	6.70	7.72	1,220,000	B.
August.....	15,700	5,970	10,700	3.60	4.15	658,000	B.
September.....	9,210	4,890	6,500	2.19	2.44	387,000	B.
The year.....	198,000	4,890	18,700	6.30	85.55	13,600,000	
1910-11.							
October.....	62,300	10,300	23,900	8.05	9.28	1,470,000	B.
November.....	89,100	11,500	29,500	9.93	11.08	1,760,000	B.
December.....	30,800	11,900	17,600	5.93	6.80	1,080,000	B.
January.....	18,700	6,680	11,600	3.91	4.51	713,000	B.
February.....	6,680	4,300	5,470	1.84	1.92	304,000	B.
March.....	17,400	4,300	8,430	2.84	3.27	518,000	B.
April.....	20,000	8,240	11,400	3.84	4.28	678,000	B.
May.....	35,700	16,100	21,700	7.31	8.43	1,330,000	B.
June.....	60,900	22,300	35,500	12.0	13.39	2,110,000	B.
July.....	33,500	16,500	23,400	7.88	9.08	1,440,000	B.
August.....	15,200	8,570	11,400	3.84	4.43	701,000	B.
September.....	21,800	5,820	10,800	3.64	4.06	643,000	B.
The year.....	89,100	4,300	17,600	5.93	80.57	12,700,000	
1911-12.							
October.....	8,240	3,230	4,930	1.66	1.91	303,000	B.
November.....	65,100	3,040	17,500	5.89	6.57	1,040,000	B.
December.....	18,800	7,370	11,500	3.87	4.46	707,000	B.
January.....	37,800	5,180	12,800	4.31	4.97	787,000	B.
February.....	25,900	8,120	15,300	5.15	5.55	850,000	B.
March.....	7,570	4,870	5,990	2.02	2.33	368,000	B.
April.....	11,400	7,300	8,870	2.99	3.34	528,000	B.
May.....	48,400	9,630	25,200	8.48	9.78	1,550,000	B.
June.....	49,100	21,200	33,200	11.2	12.50	1,980,000	B.
July.....	23,000	12,300	19,300	6.50	7.49	1,190,000	B.
August.....	17,600	6,800	11,600	3.91	4.51	713,000	B.
September.....	10,700	4,120	6,490	2.19	2.44	386,000	B.
The year.....	65,100	3,040	14,400	4.85	65.85	10,400,000	

Monthly discharge of Skagit River near Sedro Woolley—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1912-13.							
October.....	11,300	3,780	5,930	2.00	2.31	365,000	B.
November.....	50,600	4,650	15,100	5.08	5.67	898,000	B.
December.....	19,000	8,570	11,000	3.91	4.51	713,000	B.
January.....	16,600	5,320	9,200	3.10	3.57	566,000	B.
February.....	40,600	4,900	11,000	3.70	3.85	611,000	B.
March.....	14,400	6,240	8,720	2.94	3.39	536,000	B.
April.....	24,200	6,980	14,300	4.81	5.37	851,000	B.
May.....	50,600	10,600	25,700	8.65	9.97	1,580,000	B.
June.....	69,200	28,400	42,900	14.4	16.07	2,550,000	B.
July.....	41,300	18,600	30,100	10.1	11.64	1,850,000	B.
August.....	23,300	10,300	15,200	5.12	5.90	935,000	B.
September.....	43,400	7,500	13,100	4.41	4.92	780,000	B.
The year.....	69,200	3,780	16,900	5.69	77.17	12,200,000	
1913-14.							
October.....	46,200	6,000	14,000	4.71	5.43	861,000	B.
November.....	49,100	7,500	16,700	5.62	6.27	994,000	B.
December.....	17,600	5,770	8,870	2.99	3.45	545,000	B.
January.....	104,000	6,000	22,000	7.41	8.54	1,350,000	B.
February.....	13,900	6,380	8,470	2.85	2.97	470,000	B.
March.....	23,500	9,590	15,000	5.05	5.82	922,000	B.
April.....	34,800	9,590	19,800	6.67	7.44	1,180,000	B.
May.....	42,500	15,100	26,100	8.79	10.13	1,600,000	B.
June.....	39,800	15,500	23,700	7.98	8.90	1,410,000	B.
July.....	32,000	11,500	19,500	6.57	7.57	1,200,000	B.
August.....	13,200	8,710	10,300	3.47	4.00	633,000	B.
September.....	20,800	6,150	9,360	3.15	3.51	557,000	B.
The year.....	104,000	5,770	16,200	5.45	74.03	11,700,000	
1914-15.							
October.....	29,200	6,380	9,920	3.34	3.85	610,000	B.
November.....	41,800	10,500	19,600	6.60	7.36	1,170,000	B.
December.....	14,600	5,290	7,930	2.67	3.08	488,000	B.
January.....	10,500	5,080	7,120	2.40	2.77	438,000	B.
February.....	7,430	5,290	6,060	2.04	2.12	337,000	B.
March.....	15,600	5,290	8,580	2.89	3.33	528,000	B.
April.....	66,500	9,060	19,700	6.63	7.40	1,170,000	B.
May.....	24,800	9,990	13,700	4.61	5.32	842,000	B.
June.....	18,400	8,380	11,700	3.94	4.40	696,000	B.
July.....	14,900	7,510	10,400	3.50	4.04	640,000	B.
August.....	11,000	7,790	9,220	3.10	3.57	567,000	B.
September.....	7,240	2,830	4,500	1.52	1.70	268,000	B.
The year.....	66,500	2,830	10,700	3.60	48.94	7,750,000	
1915-16.							
October.....	36,000	2,830	10,000	3.37	3.88	615,000	B.
November.....	33,900	6,100	12,100	4.07	4.54	720,000	B.
December.....	51,900	7,300	14,300	4.81	5.54	879,000	B.
January.....	13,700	3,270	5,460	1.84	2.12	336,000	B.
February.....	54,600	4,740	16,400	5.52	5.95	943,000	B.
March.....	41,000	8,260	19,100	6.43	7.41	1,170,000	B.
April.....	26,300	12,900	16,900	5.69	6.35	1,010,000	B.
May.....	36,000	16,000	24,000	8.08	9.32	1,480,000	B.
June.....	75,000	21,000	39,400	13.3	14.84	2,340,000	B.
July.....	45,400	22,400	33,300	11.2	12.91	2,050,000	B.
August.....	25,800	10,300	17,600	5.93	6.84	1,080,000	B.
September.....	15,600	6,100	8,620	2.90	3.24	513,000	B.
The year.....	75,000	2,830	18,100	6.09	82.94	13,100,000	
1916-17.							
October.....	10,800	4,500	5,920	1.99	2.29	364,000	B.
November.....	31,700	6,630	11,400	3.84	4.28	678,000	B.
December.....	11,700	5,330	7,290	2.45	2.82	448,000	B.
January.....	12,300	5,690	7,650	2.58	2.97	470,000	B.
February.....	12,600	5,690	9,320	3.14	3.27	518,000	B.
March.....	8,880	5,330	6,280	2.11	2.43	386,000	B.
April.....	14,700	6,630	11,000	3.70	4.13	655,000	B.
May.....	51,000	12,600	26,100	8.76	10.13	1,600,000	B.
June.....	57,600	26,100	40,100	13.5	15.06	2,390,000	B.
July.....	52,300	19,700	37,600	12.7	14.64	2,310,000	B.
August.....	21,600	12,000	16,500	5.56	6.41	1,010,000	B.
September.....	15,500	7,880	10,000	3.37	3.76	595,000	B.
The year.....	57,600	4,500	15,800	5.32	72.19	11,400,000	

Monthly discharge of Skagit River near Sedro Wooley—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....	19,200	5,690	8,140	2.74	3.16	501,000	B.
November.....	29,600	6,250	11,100	3.74	4.17	660,000	B.
December.....	155,000	8,320	36,300	12.2	14.07	2,230,000	B.
January.....	119,000	12,700	32,800	11.0	12.68	2,020,000	B.
February.....	27,000	7,500	14,100	4.75	4.95	783,000	B.
March.....	32,400	5,900	11,500	3.87	4.46	707,000	B.
April.....	24,800	10,900	16,800	5.66	6.32	1,000,000	B.
May.....	39,600	13,000	23,200	7.81	9.00	1,430,000	B.
June.....	61,100	17,700	36,900	12.4	13.83	2,200,000	B.
July.....	32,400	15,000	22,100	7.44	8.58	1,360,000	B.
August.....	18,700	9,210	12,800	4.31	4.97	787,000	B.
September.....	11,200	6,110	8,260	2.78	3.10	492,000	B.
The year.....	155,000	5,690	19,600	6.60	89.29	14,200,000	
1918-19.							
October.....	66,100	5,900	14,400	4.85	5.59	885,000	B.
November.....	22,700	7,500	12,600	4.24	4.73	750,000	B.
December.....	67,600	8,900	21,400	7.21	8.31	1,320,000	B.
January.....	42,000	7,080	15,300	5.15	5.94	941,000	B.
February.....	15,300	7,540	10,000	3.37	3.51	555,000	B.
March.....	14,100	7,540	9,110	3.07	3.54	560,000	B.
April.....	25,500	11,500	18,100	6.09	6.80	1,080,000	B.
May.....	65,400	16,100	28,900	9.73	11.22	1,780,000	B.
June.....	43,200	22,000	30,000	10.1	11.27	1,790,000	B.
July.....	40,800	17,800	27,800	9.36	10.79	1,710,000	B.
August.....	18,700	9,340	13,800	4.65	5.36	848,000	B.
September.....		6,160	8,220	2.77	3.09	489,000	B.
The year.....	67,600	5,900	17,500	5.89	80.15	12,700,000	

NOTE.—Maximum discharge during period of record, 220,000 second-feet at about 9 a. m. Nov. 30, 1909; minimum discharge, 2,830 second-feet Sept. 29-30, and Oct. 10-11, 1915. Mean discharge for September, 1919, estimated by percentage comparison of flow of Skagit River near Sedro Woolley with combined flow of main tributaries from 1914 to 1919.

Yearly discharge of Skagit River near Sedro Woolley.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maxi- mum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1909.....	92,600	3,510	5,520	Oct.....	11,900	4.01	54.48	8,620,000
1910.....	198,000	4,890	6,500	Sept.....	18,700	6.30	85.55	13,600,000
1911.....	89,100	4,300	5,470	Feb.....	17,600	5.93	80.57	12,700,000
1912.....	65,100	3,040	4,930	Oct.....	14,400	4.85	65.85	10,400,000
1913.....	69,200	3,780	5,930	Oct.....	16,900	5.69	77.17	12,200,000
1914.....	104,000	5,770	8,470	Feb.....	16,200	5.45	74.03	11,700,000
1915.....	66,500	2,830	4,500	Sept.....	10,700	3.60	48.91	7,750,000
1916.....	75,000	2,830	5,460	Jan.....	18,100	6.09	82.94	13,100,000
1917.....	57,600	4,500	5,920	Oct.....	15,800	5.32	72.19	11,400,000
1918.....	155,000	5,690	8,140	Oct.....	19,600	6.60	89.29	14,200,000
1919.....	67,600	5,900	8,220	Sept.....	17,500	5.89	80.15	12,700,000
The period...	198,000	2,830	4,500	Sept., 1915.	16,100	5.43	73.71	11,700,000

STETATTLE CREEK NEAR MARBLEMOUNT (48).

Staff gage 600 feet above Skagit trail bridge, a quarter of a mile above mouth, and 22 miles by trail northeast of Marblemount, in Whatcom County, below all tributaries.

Monthly discharge of Stetattle Creek near Marblemount.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1913-14.					
December 19-31.....	53	30	37.8	974	B.
January.....	1,800	33	192	11,800	B.
February.....	120	23	39.0	2,170	B.
March.....	362	55	126	7,750	A.
The period.....				22,700	
1914-15.					
December.....	250	29	56.9	3,500	C.
January.....	70	26	37.2	2,290	A.
February.....	55	28	41.0	2,280	A.
March.....	238	42	106	6,520	A.
April.....	1,470	117	259	15,400	B.
The period.....				30,000	

NOTE.—Maximum discharge during period of record, 1,800 second-feet Jan. 6, 1914; minimum discharge, 23.6 second-feet Feb. 11-12, 1914.

CASCADE RIVER NEAR MARBLEMOUNT (49).

Staff gage at dam site a quarter of a mile below Marble Creek, 8 miles above Marblemount and mouth of Cascade River, in Skagit County. From April 1 to May 24, 1909, the gage was 6 miles downstream.

Monthly discharge of Cascade River near Marblemount.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
March 8-31.....	1,080	344	421	20,000	B.
April.....	678	455	543	32,300	B.
May.....	2,660	535	1,180	72,600	B.
June.....	6,310	1,440	2,320	138,000	B.
July.....	3,370	1,160	1,800	111,000	B.
August.....	2,430	694	983	60,400	B.
September.....	1,240	494	836	49,700	B.
The period.....				484,000	
1909-10.					
October.....	1,320	472	647	39,800	B.
November.....	31,700	444	3,530	210,000	B.
December.....	4,000	436	1,100	67,600	B.
January.....	1,800	284	498	30,600	B.
February.....	520	284	355	19,700	B.
March.....	1,900	400	976	60,000	B.
April.....	4,350	488	1,270	75,600	B.
May.....	7,000	640	1,860	114,000	B.
June.....	6,060	404	1,220	72,600	B.
July.....	4,460	1,400	2,250	138,000	B.
August.....	1,630	492	1,010	62,100	B.
September.....	1,280	418	674	40,100	B.
The year.....	31,700	284	1,280	930,000	

Monthly discharge of Cascade River near Marblemount—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1910-11.					
October.....	8,700	670	2,560	157,000	B.
November.....	10,800	700	2,270	135,000	B.
December.....	1,440	580	816	50,200	B.
January.....	780	344	446	27,400	B.
February.....	350	250	275	15,300	B.
March.....	900	212	376	23,100	B.
April.....	1,240	323	516	30,700	B.
May.....	4,960	731	1,350	83,000	B.
June.....	7,500	1,190	3,130	186,000	B.
July.....	4,250	1,340	2,380	146,000	B.
August.....	1,720	678	1,080	66,400	B.
September.....	1,840	290	848	50,500	B.
The year.....	10,800	212	1,340	971,000	
1911-12.					
October.....	710	212	312	19,200	B.
November.....	3,160	225	729	43,400	B.
December.....	678	290	423	26,000	B.
January.....	1,490	250	500	30,700	B.
February.....	1,290	305	705	40,600	B.
March.....	335	225	274	16,800	B.
April.....	585	335	393	23,400	B.
May.....	4,250	445	2,050	126,000	B.
June.....	6,380	1,490	3,760	224,000	B.
July.....	3,450	1,020	2,120	130,000	B.
August.....	2,880	445	1,370	84,200	B.
September.....	780	275	473	28,100	B.
The year.....	6,380	212	1,090	792,000	
1912-13.					
October.....	780	250	324	19,900	B.
November.....	1,970	275	626	37,200	B.
December.....	535	305	350	21,500	B.
January.....	350	228	278	17,100	B.
February.....	1,100	222	382	21,200	B.
March.....	405	275	326	20,000	B.
April.....	2,490	281	738	43,900	B.
The period.....				181,000	

NOTE.—Drainage area, 222 square miles as published in previous water-supply papers, is subject to uncertainty owing to lack of accurate maps.

NORTH FORK OF SAUK RIVER NEAR BARLOW PASS (50).

Water-stage recorder (PL. V. A) 500 feet below dam site, 2 $\frac{1}{4}$ miles above junction with South Fork, and 7 miles northeast of Barlow Pass, in Snohomish County.

Drainage area, 76 square miles; measured on topographic map.

Monthly discharge of North Fork of Sauk River near Barlow Pass.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....	292		132	1.74	2.01	8,120	B.
November.....	525	103	254	3.34	3.73	15,100	B.
December.....		180	1,290	17.0	19.60	79,300	C.
January.....		292	757	9.96	11.48	46,500	C.
February.....	498	156	283	3.72	3.87	15,700	B.
March.....	634	110	238	3.13	3.61	14,600	A.
April.....	923	316	565	7.43	8.29	33,600	A.
May.....	1,580	460	831	10.9	12.57	51,100	A.
June.....	2,580	634	1,450	19.1	21.31	86,300	A.
July.....	1,040	390	663	8.72	10.05	40,800	A.
August.....	456	210	308	4.05	4.67	18,900	A.
September.....	240	112	175	2.30	2.57	10,400	A.
The year.....			581	7.64	103.76	420,000	

Monthly discharge of North Fork of Sauk River near Barlow Pass—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1918-19.							
October.....	1,500	118	438	5.76	6.64	26,900	B.
November.....	558	182	349	4.59	5.12	20,800	A.
December.....	2,160	196	562	7.39	8.52	34,600	A.
January.....	1,230	159	406	5.34	6.16	25,000	A.
February.....	322	155	220	2.89	3.01	12,200	A.
March.....	358	122	171	2.25	2.59	10,500	A.
April.....	890	331	524	6.89	7.69	31,200	A.
May.....	2,510	538	997	13.1	15.10	61,300	A.
June.....	1,570	778	1,080	14.2	15.84	64,300	A.
July.....	1,500	.....	1,010	13.3	15.33	62,100	A.
August.....	.....	.....	403	5.30	6.11	24,800	D.
September.....	.....	105	212	2.79	3.11	12,600	C.
The year.....	2,510	105	534	7.03	95.22	386,000	

NOTE.—Maximum discharge during period of record, 11,000 second-feet Dec. 29, 1917; minimum discharge, 75 second-feet Oct. 20, 1917.

SAUK RIVER ABOVE WHITECHUCK RIVER, NEAR DARRINGTON (51).

Water-stage recorder half a mile above Whitechuck River, 9½ miles southeast of Darrington, in Snohomish County.

Drainage area, 152 square miles; measured on topographic maps.

Monthly discharge of Sauk River above Whitechuck River near Darrington.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....	.....	.....	421	2.77	3.19	25,900	C.
November.....	1,330	272	545	3.59	4.00	32,400	A.
December.....	17,400	383	3,510	23.1	26.63	216,000	B.
January.....	7,380	871	2,160	14.2	16.37	133,000	B.
February.....	2,000	421	954	6.28	6.54	53,000	B.
March.....	2,210	311	732	4.82	5.56	45,000	A.
April.....	3,130	760	1,290	8.49	9.47	76,800	A.
May.....	.....	916	1,570	10.3	11.87	96,500	B.
June.....	3,790	1,210	2,390	15.7	17.52	142,000	A.
July.....	2,000	720	1,230	8.09	9.33	75,600	A.
August.....	1,010	439	650	4.28	4.93	40,000	A.
September.....	496	.....	323	2.12	2.36	19,200	C.
The year.....	17,400	.....	1,320	8.68	117.77	955,000	
1918-19.							
October.....	4,980	262	1,130	7.43	8.57	69,500	A.
November.....	1,740	488	978	6.43	7.17	58,200	A.
December.....	6,380	534	1,580	10.4	11.99	97,200	A.
January.....	4,500	351	1,190	7.83	9.03	73,200	A.
February.....	824	414	591	3.89	4.05	32,800	A.
March.....	1,110	403	572	3.76	4.34	35,200	A.
April.....	1,850	755	1,280	8.42	9.39	76,200	A.
May.....	5,130	1,030	2,080	13.7	15.79	128,000	A.
June.....	3,380	1,470	2,120	13.9	15.51	126,000	A.
July.....	3,050	1,080	1,970	13.0	14.99	121,000	A.
August.....	1,080	476	770	5.07	5.84	47,300	A.
September.....	.....	210	384	2.53	2.82	22,800	C.
The year.....	6,380	210	1,230	8.09	109.49	887,000	

NOTE.—Maximum discharge during period of record, 21,000 second-feet at 8 a. m. Dec. 29, 1917; minimum discharge, 205 second-feet Sept. 30, 1919.

SAUK RIVER ABOVE CLEAR CREEK, NEAR DARRINGTON (52).

Staff gage 50 feet above Clear Creek, 1 mile below Cougar Creek, and 2½ miles above Darrington, in Snohomish County.

Drainage area, 259 square miles; measured on topographic maps.

Monthly discharge of Sauk River above Clear Creek, near Darrington.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1910.					
September.....	720	386	523	31,100	B.
The period.....				31,100	
1910-11.					
October.....	15,200	1,100	3,100	191,000	B.
November.....	22,600	1,200	4,470	266,000	D.
December.....	16,000	1,000	2,860	176,000	D.
January.....	3,570	880	1,490	91,600	A.
February.....	880	428	660	36,700	B.
March.....	2,170	420	901	55,400	A.
April.....	2,170	880	1,250	74,400	A.
May.....	6,050	1,770	2,590	159,000	A.
June.....	8,610	2,300	4,030	240,000	A.
July.....	4,600	1,310	2,410	148,000	A.
August.....	1,310	680	952	58,500	B.
September.....	1,850	450	948	56,400	C.
The year.....	22,600	420	2,140	1,550,000	
1913.					
January.....	2,300	505	957	58,800	B.
February.....	3,820	505	1,060	58,900	B.
March.....	1,810	590	807	49,600	B.
April.....	2,840	680	1,400	83,300	B.
May 23-28.....	5,030	4,200	4,640	55,200	C.
June 3-19.....	8,060	3,470	5,460	184,000	C.
July.....	5,970	2,300	3,760	231,000	A.
August.....	2,840	890	1,580	97,200	A.
September.....	12,500	680	1,610	95,800	A.

SAUK RIVER AT DARRINGTON (53).

Staff gage 700 feet above suspension footbridge half a mile southeast of Darrington, in Snohomish County.

Drainage area, 293 square miles; measured on topographic maps.

Monthly discharge of Sauk River at Darrington.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1914.							
June 15-30.....	4,970	2,120	3,110	10.6	6.31	98,700	A.
July.....	4,420	1,040	2,010	6.86	7.91	124,000	A.
August.....	1,180	595	876	2.99	3.45	53,900	A.
September.....	3,240	470	1,020	3.48	3.88	60,700	A.
The period.....						337,000	
1914-15.							
October.....	5,560	690	1,570	5.36	6.18	96,500	A.
November.....	11,600	1,420	3,820	13.0	14.50	227,000	B.
December.....	1,680	550	841	2.87	3.31	51,700	A.
January.....	1,340	510	755	2.58	2.97	46,400	A.
February.....	975	572	739	2.52	2.62	41,000	A.
March.....	3,450	530	1,190	4.06	4.68	73,200	A.
April.....	20,600	1,260	3,030	10.3	11.49	180,000	B.
May.....	2,870	1,110	1,510	5.15	5.94	92,800	A.
June.....	2,250	850	1,220	4.16	4.64	72,600	A.
July.....	1,420	740	1,020	3.48	4.01	62,700	A.
August.....	1,110	530	844	2.88	3.32	51,900	A.
September.....	640	340	449	1.53	1.71	26,700	B.
The year.....	20,600	340	1,410	4.81	65.37	1,020,000	

Monthly discharge of Sauk River at Darrington—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1915-16.							
October.....	11,100	370	1,620	5.53	6.38	99,600	B.
November.....	4,160	850	1,760	6.01	6.70	105,000	A.
December.....	12,500	975	2,340	7.99	9.21	144,000	B.
January.....	975	418	586	2.00	2.31	36,000	A.
February.....	9,070	400	2,490	8.50	9.17	143,000	A.
March.....	9,460	1,110	2,590	8.84	10.19	159,000	A.
April.....	3,670	1,500	2,140	7.30	8.14	127,000	A.
May.....	4,690	1,890	2,900	9.90	11.41	178,000	A.
June.....	9,860	2,390	4,870	16.6	18.52	290,000	B.
July.....	6,520	2,250	4,100	14.0	16.14	252,000	A.
August.....	2,870	1,110	1,880	6.42	7.40	116,000	A.
September.....	1,590	640	962	3.28	3.66	57,200	A.
The year.....	12,500	370	2,350	8.02	109.23	1,710,000	
1916-17.							
October.....	1,780	370	541	1.85	2.13	33,300	A.
November.....	6,010	618	1,590	5.43	6.06	94,600	A.
December.....	2,250	490	893	3.05	3.52	54,900	A.
January.....	1,340	550	795	2.71	3.12	48,900	A.
February.....	2,000	595	1,190	4.06	4.23	66,100	A.
March.....	910	510	679	2.32	2.68	41,800	A.
April.....	2,250	690	1,520	5.19	5.79	90,400	A.
May.....	6,550	1,420	3,110	10.6	12.22	191,000	A.
June.....	7,390	3,230	5,240	17.9	19.97	312,000	B.
July.....	6,830	2,120	5,050	17.2	19.83	311,000	B.
August.....	2,700	1,110	1,710	5.84	6.73	105,000	A.
September.....	1,260	618	836	2.85	3.18	49,700	A.
The year.....	7,390	370	1,930	6.59	89.46	1,400,000	
1917-18.							
October.....	1,500	400	632	2.16	2.49	38,900	A.
November.....	4,280	470	1,130	3.86	4.31	67,200	A.
December.....		740	7,430	25.4	29.28	457,000	C.
January.....		1,420	4,430	15.1	17.41	272,000	B.
February.....	5,260	755	1,970	6.72	7.00	109,000	B.
March.....	4,660	580	1,560	5.32	6.13	95,900	B.
April.....	3,080	1,240	2,070	7.06	7.88	123,000	A.
May.....	4,470	1,510	2,570	8.77	10.11	158,000	A.
June.....	6,980	1,920	4,050	13.8	15.40	241,000	A.
July.....	3,400	1,420	2,210	7.54	8.69	136,000	A.
August.....	2,140	795	1,270	4.33	4.99	78,100	A.
September.....	828	489	665	2.27	2.53	39,600	A.
The year.....		400	2,510	8.57	116.22	1,820,000	
1918-19.							
October.....	12,800	489	2,390	8.16	9.41	147,000	A.
November.....		1,240	2,100	7.17	8.00	125,000	A.
December.....	10,800	1,420	3,350	11.4	13.14	206,000	A.
January.....	9,550	1,080	2,830	9.66	11.14	174,000	A.
February.....	3,080	1,330	1,790	6.11	6.36	99,400	A.
March.....	2,640	1,160	1,490	5.09	5.87	91,600	A.
April.....	4,100	2,260	2,980	10.2	11.38	177,000	A.
May.....	6,100	2,380	3,870	13.2	15.22	238,000	A.
June.....	5,030	2,930	3,860	13.2	14.73	230,000	B.
July.....	5,090	1,960	3,450	11.8	13.60	212,000	B.
August.....	3,480	885	1,640	5.60	6.46	101,000	A.
September.....	1,210	548	747	2.55	2.84	44,400	A.
The year.....	12,800	489	2,550	8.70	118.15	1,850,000	

NOTE.—Maximum discharge during period of record, 36,000 second-feet at 9 a. m. Dec. 29, 1917; minimum discharge, 340 second-feet Sept. 28-29, 1915.

Yearly discharge of Sauk River at Darrington.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
			Mean.					Month.
1915.....	20,600	340	449	Sept.....	1,410	4.81	65.37	1,020,000
1916.....	12,500	370	586	Jan.....	2,350	8.02	109.23	1,710,000
1917.....	7,390	370	541	Oct.....	1,930	6.59	89.46	1,400,000
1918.....	.....	400	632	Oct.....	2,510	8.57	116.22	1,820,000
1919.....	12,800	489	747	Sept.....	2,550	8.70	118.15	1,850,000
The period.....	.....	340	449	Sept., 1915	2,150	7.34	99.69	1,530,000

SAUK RIVER NEAR SUIATTLE CROSSING, NEAR SAUK (54).

Prior to March 3, 1911, in vicinity of Suiattle Crossing, 2 miles below Suiattle River; beginning that date 6 miles below Suiattle Crossing and 4 miles above Sauk, in Skagit County. Staff gages used at upper site and chain gage at lower site.

Drainage area, 700 square miles; measured on topographic maps.

Monthly discharge of Sauk River near Suiattle Crossing, near Sauk.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
March 3-31.....	5,130	1,160	2,420	139,000	A.
April.....	5,130	1,680	2,690	160,000	A.
May.....	10,300	3,940	5,500	338,000	A.
June.....	15,900	4,820	8,520	507,000	A.
July.....	8,350	3,450	5,630	346,000	A.
August.....	3,450	1,620	2,360	145,000	A.
September.....	4,920	1,050	2,350	140,000	A.
The period.....	.....	.....	.....	1,780,000	
1911-12.					
October.....	2,360	780	1,100	67,600	B.
November.....	20,500	780	5,320	317,000	B.
December.....	5,560	2,100	3,170	195,000	A.
January.....	11,800	975	4,000	246,000	B.
February.....	8,460	2,140	4,430	255,000	B.
March.....	2,140	1,220	1,520	93,500	B.
April.....	3,480	2,020	2,410	143,000	B.
May.....	13,400	2,020	6,760	416,000	B.
June.....	15,000	5,000	9,580	570,000	B.
July.....	7,570	2,840	5,180	319,000	A.
The period.....	.....	.....	.....	2,620,000	

SOUTH FORK OF SAUK RIVER NEAR BARLOW PASS (55).

Water-stage recorder $2\frac{3}{4}$ miles above junction with North Fork and 5 miles northeast of Barlow Pass, in Snohomish County.

Drainage area, 32.7 square miles; measured on topographic maps.

Monthly discharge of South Fork of Sauk River near Barlow Pass.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....	360	.....	118	3.61	4.16	7,260	B.
November.....	613	77	202	6.18	6.90	12,000	A.
December.....	4,420	98	963	29.4	33.89	59,200	B.
January.....	1,890	152	498	15.2	17.52	30,600	B.
February.....	509	75	213	6.51	6.78	11,800	A.
March.....	599	48	176	5.38	6.20	10,800	A.
April.....	520	176	322	9.85	10.99	19,200	A.
May.....	780	204	376	11.5	13.26	23,100	A.
June.....	1,020	291	575	17.6	19.64	34,200	A.
July.....	487	206	322	9.85	11.36	19,800	A.
August.....	392	132	209	6.39	7.37	12,900	A.
September.....	154	.....	93.5	2.86	3.19	5,560	A.
The year.....	4,420	.....	340	10.4	141.26	246,000	
1918-19.							
October.....	1,910	70	373	11.4	13.14	22,900	A.
November.....	410	109	238	7.28	8.12	14,200	A.
December.....	1,920	130	459	14.0	16.14	28,200	A.
January.....	.....	.....	313	9.57	11.03	19,200	D.
February.....	207	81	126	3.85	4.01	7,000	A.
March.....	.....	.....	136	4.16	4.80	8,360	D.
April.....	.....	204	377	11.5	12.83	22,400	C.
May.....	1,510	.....	654	20.0	23.06	40,200	C.
June.....	.....	.....	620	19.0	21.20	36,900	D.
July.....	721	277	517	15.8	18.22	31,800	B.
August.....	305	.....	203	6.21	7.16	12,500	D.
September.....	.....	52	102	3.12	3.48	6,070	C.
The year.....	1,920	52	345	10.6	143.19	250,000	

NOTE.—Maximum discharge during period of record, 5,800 second-feet at 1.30 a. m. Dec. 29, 1917; minimum discharge estimated at 40 second-feet Sept. 25, 1918.

CLEAR CREEK NEAR DARRINGTON (56).

Staff gage at ranger station just above mouth of creek and 2½ miles above Darrington, in Snohomish County.

Drainage area, 30 square miles; measured on topographic map.

Monthly discharge of Clear Creek near Darrington.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1910.					
September.....	194	7	27.8	1,650	C.
1910-11.					
October.....	2,930	46	558	34,300	D.
January.....	435	46	132	8,120	C.
February.....	46	35	41.1	2,450	C.
March.....	700	34	179	11,000	C.
April.....	600	110	230	13,700	C.
May.....	1,000	138	424	26,100	D.
June.....	915	46	301	17,900	D.
July.....	336	10	91.8	5,640	D.
August.....	155	2	30.7	1,890	D.
September.....	760	42	199	11,800	C.

BAKER RIVER BELOW ANDERSON CREEK, NEAR CONCRETE (57).

Prior to October 22, 1910, at trail bridge one-eighth mile above Anderson Creek; beginning that date 350 feet below Anderson Creek, a quarter of a mile above Baker River ranger station, and 11 miles above Concrete, in Whatcom County. Staff gages used prior to September 24, 1915; water-stage recorder (Pl. V, B) thereafter.

Drainage area, 184 square miles; measured on topographic map.

Monthly discharge of Baker River below Anderson Creek, near Concrete.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910-11.							
October.....			3,400	18.5	21.33	209,000	C.
November.....			3,500	19.0	21.20	208,000	C.
December.....			1,900	10.3	11.87	117,000	C.
January.....	1,510	572	909	4.94	5.70	55,900	A.
February.....	572	410	503	2.73	2.84	27,900	A.
March.....	2,210	410	943	5.12	5.90	58,000	A.
April.....	3,070	750	1,380	7.50	8.37	82,100	A.
May.....	5,130	1,500	2,660	14.5	16.72	164,000	B.
June.....	7,000	2,210	4,040	22.0	24.55	240,000	B.
July.....	5,130	2,340	3,710	20.2	23.29	228,000	A.
August.....	2,770	1,510	2,060	11.2	12.91	127,000	A.
September.....	3,920	890	1,930	10.5	11.71	115,000	A.
The year.....		410	2,250	12.2	166.39	1,630,000	
1911-12.							
October.....	2,080	572	926	5.03	5.80	56,900	A.
November.....	5,580	524	1,970	10.7	11.94	117,000	A.
December.....	2,340	818	1,440	7.83	9.03	88,500	A.
January.....	3,560	572	1,610	8.75	10.09	99,000	B.
February.....	3,560	890	1,920	10.4	11.22	110,000	B.
March.....	966	626	736	4.00	4.61	45,300	B.
April.....	1,610	966	1,160	6.30	7.03	69,000	B.
May.....	4,500	1,310	2,830	15.4	17.75	174,000	A.
June.....	6,280	2,210	4,140	22.5	25.10	246,000	A.
July.....	4,110	1,960	2,980	16.2	18.68	183,000	A.
August.....	4,110	1,050	2,190	11.9	13.72	135,000	A.
September.....	1,840	890	1,370	7.45	8.31	81,500	B.
The year.....	6,280	524	1,940	10.5	143.28	1,410,000	
1912-13.							
October.....	2,080	710	1,120	6.09	7.02	68,900	B.
November.....	6,280	800	2,360	12.8	14.28	140,000	B.
December.....	1,500	710	936	5.09	5.87	57,600	B.
January.....	840	615	688	3.74	4.31	42,300	B.
February.....	5,130	525	1,190	6.47	6.74	66,100	B.
March.....	920	660	764	4.15	4.78	47,000	B.
April.....	3,070	770	1,830	9.95	11.10	109,000	B.
May.....	5,810	1,500	3,830	20.8	23.98	236,000	C.
June.....	7,500	3,740	5,030	27.3	30.46	299,000	C.
July.....	7,000	3,070	4,690	25.5	29.40	288,000	C.
August.....	3,390	1,500	2,330	12.7	14.64	143,000	B.
September.....	7,750	457	1,590	8.64	9.64	94,600	C.
The year.....	7,750	457	2,200	12.0	162.22	1,590,000	
1913-14.							
October.....	7,480	431	1,790	9.73	11.22	110,000	C.
November.....	8,460	1,120	2,170	11.8	13.17	129,000	D.
December.....	1,910	730	1,090	5.92	6.82	67,000	C.
January.....	22,700	847	2,720	14.8	17.06	167,000	C.
February.....	1,620	730	962	5.23	5.45	53,400	B.
March.....	3,480	1,120	1,560	8.48	9.78	95,900	C.
April.....	4,260	1,270	1,900	10.3	11.49	113,000	C.
May.....		1,910	3,010	16.4	18.91	185,000	C.
June.....	5,180	1,710	2,690	14.6	16.29	160,000	C.
July.....	4,260	1,440	2,590	14.1	15.73	154,000	C.
August.....		1,350	1,610	8.75	10.09	99,000	C.
September.....	5,180	975	1,610	8.75	9.76	95,800	B.
The year.....	22,700	431	1,970	10.7	145.77	1,430,000	

Monthly discharge of Baker River below Anderson Creek, near Concrete—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1914-15.							
October.....	4,700	910	1,810	9.84	11.34	111,000	B.
November.....	8,120	1,350	2,800	15.2	16.96	167,000	B.
December.....	1,520	554	777	4.22	4.86	47,800	B.
January.....	1,740	554	884	4.80	5.53	54,400	B.
February.....	1,190	730	856	4.65	4.84	47,500	B.
March.....	3,300	676	1,300	7.07	8.15	79,900	B.
April.....	17,200	1,270	3,040	16.5	18.41	181,000	B.
May.....	4,480	1,120	1,990	10.8	12.45	122,000	B.
June.....	2,950	1,190	1,800	9.78	10.91	107,000	B.
July.....	2,790	1,190	1,900	10.3	11.87	117,000	B.
August.....	2,500	1,350	1,810	9.84	11.34	111,000	B.
September.....	1,620	597	893	4.85	5.41	53,100	B.
The year.....	17,200	554	1,660	9.02	122.07	1,200,000	
1915-16.							
October.....	10,400	580	2,340	12.7	14.64	144,000	B.
November.....	3,290	850	1,380	7.50	8.37	82,100	A.
December.....	7,230	821	1,710	9.29	10.71	105,000	A.
January.....	943	525	633	3.44	3.97	38,900	A.
February.....	12,600	543	2,330	12.7	13.70	134,000	A.
March.....	5,930	880	2,080	11.3	13.03	128,000	A.
April.....	3,760	1,410	1,940	10.5	11.71	115,000	A.
May.....	3,980	1,410	2,430	13.2	15.22	149,000	A.
June.....	7,980	2,060	3,920	21.3	23.76	233,000	A.
July.....	5,410	2,710	3,650	19.8	22.83	224,000	A.
August.....	3,130	1,410	2,490	13.5	15.56	153,000	A.
September.....	2,110	943	1,350	7.34	8.19	80,300	A.
The year.....	12,600	525	2,190	11.9	161.69	1,590,000	
1916-17.							
October.....	1,250	508	730	3.97	4.58	44,900	A.
November.....	3,290	688	1,270	6.90	7.70	75,600	A.
December.....	1,330	525	713	3.88	4.47	43,800	A.
January.....	1,220	543	734	3.99	4.60	45,100	A.
February.....	1,500	543	1,050	5.71	5.95	58,300	A.
March.....	821	525	632	3.43	3.95	38,900	A.
April.....	2,220	642	1,470	7.99	8.91	87,500	A.
May.....	6,480	1,590	3,250	17.7	20.41	200,000	A.
June.....	7,600	2,460	4,490	24.4	27.22	267,000	B.
July.....	7,410	2,280	4,960	27.0	31.13	305,000	A.
August.....	2,910	1,690	2,230	12.1	13.95	137,000	A.
September.....	1,890	943	1,400	7.61	8.49	83,300	B.
The year.....	7,600	508	1,910	10.40	141.36	1,390,000	
1917-18.							
October.....		665	1,320	7.17	8.27	81,200	B.
November.....	9,110	738	2,100	11.4	12.72	125,000	A.
December.....	27,400	911	5,230	28.4	32.74	322,000	B.
January.....	20,200	1,560	5,280	28.7	33.09	325,000	B.
February.....	2,160	615	1,240	6.74	7.02	68,900	A.
March.....	3,240	505	1,180	6.41	7.39	72,600	A.
April.....	3,000		1,800	9.78	10.91	107,000	A.
May.....	4,900	1,300	2,460	13.4	15.45	151,000	A.
June.....	7,780	1,900	4,080	22.2	24.77	243,000	A.
July.....	4,520	2,330	3,080	16.7	19.25	189,000	A.
August.....	2,580	1,300	1,850	10.1	11.64	114,000	B.
September.....			1,400	7.61	8.49	83,300	C.
The year.....	27,400	505	2,600	14.1	191.74	1,880,000	
1918-19.							
October.....	9,320	920	2,360	12.8	14.76	145,000	A.
November.....	2,640	706	1,430	7.77	8.67	85,100	A.
December.....	14,800	781	2,410	13.1	15.10	148,000	A.
January.....	3,650	591	1,370	7.45	8.59	84,200	A.
February.....	2,400	642	977	5.31	5.53	54,300	A.
March.....	1,700		790	4.29	4.95	48,600	C.
April.....	2,940	1,130	1,960	10.7	11.94	117,000	A.
May.....	9,350	1,610	3,100	16.8	19.37	191,000	A.
June.....	4,520	1,930	2,910	15.8	17.63	173,000	A.
July.....	5,360	2,080	3,350	18.2	20.98	206,000	A.
August.....	2,400	1,250	1,890	10.3	11.87	116,000	A.
September.....	2,130	659	1,130	6.14	6.85	67,200	A.
The year.....	14,800	591	1,980	10.8	146.24	1,440,000	

NOTE.—Maximum discharge during period of record, 36,800 second-feet at 12.30 p. m. Dec. 29, 1917; minimum discharge, 410 second-feet Feb. 27 and Mar. 1, 1911. Monthly discharge for October to December, 1910, estimated by comparison with record of Baker River at Concrete.

Yearly discharge of Baker River below Anderson Creek, near Concrete.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1911.....		410	503	Feb.....	2,250	12.2	166.39	1,630,000
1912.....	6,280	524	736	Mar.....	1,940	10.5	143.28	1,410,000
1913.....	7,750	457	688	Jan.....	2,200	12.0	162.22	1,590,000
1914.....	22,700	431	962	Feb.....	1,970	10.7	145.77	1,430,000
1915.....	17,200	554	777	Dec.....	1,660	9.02	122.07	1,200,000
1916.....	12,600	525	633	Jan.....	2,190	11.9	161.69	1,590,000
1917.....	7,600	508	632	Mar.....	1,910	10.4	141.36	1,390,000
1918.....	27,400	505	1,180	Mar.....	2,600	14.1	191.74	1,880,000
1919.....	14,800	591	790	Mar.....	1,980	10.8	146.24	1,440,000
The period.	27,400	410	503	Feb., 1911.	2,080	11.3	153.42	1,510,000

BAKER RIVER AT CONCRETE (58).

Staff gage at highway bridge at Concrete, a quarter of a mile above mouth of river, in Skagit county.

Drainage area, 270 square miles; measured on topographic map.

Monthly discharge of Baker River at Concrete.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910.							
September 11-30.....	2,250	865	1,300	4.81	3.58	51,600	B.
1910-11.							
October.....	13,800	1,940	4,560	16.9	19.48	280,000	B.
November.....	17,400	1,810	4,630	17.1	19.08	276,000	A.
December.....	4,510	1,560	2,560	9.48	10.93	157,000	A.
January.....	3,080	820	1,420	5.26	6.06	87,300	A.
February.....	895	640	736	2.73	2.84	40,900	A.
March.....	2,710	640	1,280	4.74	5.46	78,700	A.
April.....	3,470	1,060	1,630	6.04	6.74	97,000	A.
May.....	5,380	2,080	3,210	11.9	13.72	197,000	A.
June.....	7,690	2,670	4,470	16.6	18.52	266,000	A.
July.....	5,320	2,850	3,770	14.0	16.14	232,000	A.
August.....	2,850	1,780	2,170	8.04	9.27	133,000	A.
September.....	6,240	1,140	2,550	9.44	10.53	152,000	A.
The year.....	17,400	640	2,760	10.2	138.77	2,000,000	
1911-12.							
October.....	2,340	750	1,260	4.67	5.38	77,500	A.
November.....	12,400	700	3,060	11.3	12.61	182,000	A.
December.....	3,220	960	1,740	6.44	7.42	107,000	A.
January.....	5,780	820	2,260	8.37	9.65	139,000	A.
February.....	4,200	1,180	2,680	9.93	10.71	154,000	A.
March.....	1,140	874	992	3.67	4.23	61,000	A.
April.....	2,000	1,180	1,380	5.11	5.70	82,100	A.
May.....	6,270	1,600	3,460	12.8	14.76	213,000	A.
June.....	7,020	2,450	4,570	16.9	18.86	272,000	A.
July.....	4,200	2,000	2,980	10.0	12.68	183,000	B.
August.....	3,570	1,180	2,100	7.78	8.97	129,000	B.
September.....	2,980	860	1,250	4.63	5.17	74,400	C.
The year.....	12,400	700	2,310	8.56	116.14	1,670,000	

Monthly discharge of Baker River at Concrete—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-foot.	
1912-13.							
October.....	3,570	778	1,360	5.04	5.81	83,600	B.
November.....	9,420	855	3,080	11.4	12.72	183,000	A.
December.....	3,220	1,040	1,800	6.67	7.69	111,000	A.
January.....	1,910	634	980	3.63	4.18	60,300	B.
February.....	7,450	645	1,740	6.44	6.71	96,600	B.
March.....	2,500	772	1,230	4.56	5.26	75,600	B.
April.....	3,220	890	1,970	7.30	8.14	117,000	B.
May.....	6,600	1,390	3,540	13.1	15.10	218,000	B.
June.....	8,300	4,170	5,610	20.8	23.21	334,000	B.
July.....	7,150	2,860	5,030	18.6	21.44	309,000	B.
August.....	4,600	1,560	2,630	9.74	11.23	162,000	B.
September.....	14,600	1,050	2,320	8.59	9.58	138,000	B.
The year.....	14,600	634	2,610	9.67	131.07	1,890,000	
1913-14.							
October.....	15,200	730	2,690	9.96	11.48	165,000	A.
November.....	12,700	1,190	2,990	11.1	12.38	178,000	A.
December.....	3,030	695	1,160	4.30	4.96	71,300	A.
January.....	23,900	1,000	3,370	12.5	14.41	207,000	B.
February.....	2,240	695	1,050	3.89	4.05	58,300	B.
March.....	5,070	1,190	2,280	8.44	9.73	140,000	B.
April.....	5,190	1,310	2,740	10.1	11.27	163,000	A.
May.....	5,430	2,170	3,280	12.1	13.95	202,000	A.
June.....	4,710	1,820	2,950	10.9	12.16	176,000	B.
July.....	4,070	1,710	2,740	10.1	11.64	168,000	B.
August.....	2,300	1,400	1,730	6.41	7.39	106,000	B.
September.....	4,490	970	1,780	6.59	7.35	106,000	B.
The year.....	23,900	695	2,400	8.89	120.77	1,740,000	
1914-15.							
October.....	6,430	1,170	2,190	8.11	9.35	135,000	B.
November.....	8,950	1,360	3,260	12.1	13.50	194,000	B.
December.....	2,380	652	1,010	3.74	4.31	62,100	B.
January.....	2,130	720	1,280	4.74	5.46	78,700	B.
February.....	1,560	894	1,070	3.96	4.12	59,400	B.
March 1-4.....	1,170	838	947	3.51	.52	7,510	B.
The period.....						537,000	

NOTE.—Maximum discharge during period of record, 31,000 second-feet at about 6 p. m. Jan. 6, 1914; minimum discharge, 634 second-feet Jan. 22-23, 1913.

WHATCOM CREEK BASIN.

WHATCOM CREEK NEAR BELLINGHAM (59).

Staff gage at Northern Pacific Railway siding bridge opposite Larson's station on Bellingham Electric Railway, one-eighth mile below Lake Whatcom and $3\frac{1}{2}$ miles above mouth of creek, in Whatcom County.

The city of Bellingham obtains its water supply from the lake. The amount of this diversion has not been determined.

Drainage area, 66 square miles; measured on county map.

Monthly discharge of Whatcom Creek near Bellingham.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1910-11.					
November.....	608	100	342	20,400	A.
December.....	537	280	406	25,000	A.
January.....	493	280	397	24,400	A.
February.....	266	161	202	11,200	A.
March.....	182	132	160	9,840	A.
April.....	145	19	60.7	3,610	A.
May.....	52	2	24.4	1,500	B.
June.....	26	8	18.6	1,110	B.
July.....	30	14	19.6	1,210	B.
August.....	42	13	24.3	1,490	B.
September.....	40	11	25.1	1,490	B.
The period.....				101,000	
1911-12.					
October.....	37	11	19.0	1,170	B.
November.....	739	13	310	18,400	A.
December.....	412	280	341	21,000	A.
January.....	310	182	249	15,300	A.
February.....	310	222	278	16,000	A.
March.....	240	76	121	7,440	A.
April.....	81	66	70.0	4,170	A.
May.....	107	61	87.5	5,380	A.
June.....	93	41	59.4	3,530	A.
July.....	41	12	28.5	1,750	A.
August.....	43	9	25.9	1,590	A.
September.....	53	28	40.6	2,420	A.
The year.....	739	9	135	98,200	

NOOKSACK RIVER BASIN.

NORTH FORK OF NOOKSACK RIVER NEAR GLACIER (60).

Staff gage at Bellingham Bay & British Columbia Railroad bridge 1,000 feet below Canyon Creek, 2 miles above Boulder Creek, and 3 miles below Glacier, in Whatcom County.

North Fork of Nooksack River near Glacier.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
May 18-31.....	2,910	1,190	1,530	42,500	B.
June.....	3,940	1,350	2,380	142,000	B.
July.....	3,670	1,710	2,350	144,000	B.
August.....	2,010	1,050	1,440	88,500	B.
September.....	3,280	740	1,390	82,700	B.
The period.....				500,000	

COLUMBIA RIVER BASIN.

MAIN STREAM.

COLUMBIA RIVER AT TRAIL, BRITISH COLUMBIA (61).

Chain gage on highway bridge at Trail, 15 miles above international boundary and mouth of Clark Fork and 18 miles below mouth of Kootenai River.

Drainage area, 34,000 square miles; authority, Hydrometric Survey of British Columbia.

Monthly discharge of Columbia River at Trail, British Columbia.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1913.							
May.....	165,000	56,800	86,400	2.54	2.93	5,310,000	A.
June.....	312,000	191,000	262,000	7.70	8.59	15,600,000	B.
July.....	236,000	150,000	181,000	5.32	6.13	11,100,000	B.
August.....	152,000	98,400	125,000	3.68	4.24	7,690,000	A.
September.....	98,400	62,100	83,500	2.46	2.75	4,970,000	A.
The period.....						44,700,000	
1913-14.							
October.....	60,500	39,300	46,900	1.38	1.59	2,880,000	A.
November.....	39,300	27,800	32,200	.95	1.06	1,920,000	A.
December.....	27,800	18,600	22,600	.66	.76	1,390,000	A.
January.....	22,000	19,000	20,700	.61	.70	1,270,000	A.
February.....	18,600	15,500	16,800	.49	.51	933,000	A.
March.....	24,500	15,500	17,800	.52	.60	1,090,000	A.
April.....	69,100	23,700	43,900	1.24	1.38	2,610,000	A.
May.....	167,000	71,300	125,000	3.68	4.24	7,690,000	A.
June.....	220,000	163,000	190,000	5.60	6.25	11,300,000	B.
July.....	222,000	144,000	200,000	5.89	6.79	12,300,000	B.
August.....	140,000	87,200	112,000	3.29	3.79	6,890,000	A.
September.....	85,200	52,200	65,700	1.93	2.15	3,910,000	A.
The year.....	222,000	15,500	74,900	2.20	29.82	54,200,000	
1914-15.							
October.....	54,100	44,400	49,300	1.45	1.67	3,030,000	A.
November.....	51,500	39,600	45,900	1.35	1.51	2,730,000	A.
December.....	39,000	22,500	30,500	.89	1.03	1,880,000	A.
January.....	22,500	17,000	19,900	.58	.67	1,220,000	A.
February.....	17,000	16,000	16,400	.48	.50	911,000	A.
March.....	22,000	15,500	17,300	.51	.59	1,060,000	A.
April.....	72,000	23,100	45,500	1.34	1.50	2,710,000	A.
May.....	129,000	74,000	110,000	3.24	3.74	6,760,000	A.
June.....	137,000	127,000	123,000	3.62	4.04	7,320,000	A.
July.....	149,000	130,000	140,000	4.12	4.75	8,610,000	A.
August.....	139,000	119,000	132,000	3.88	4.47	8,120,000	A.
September.....	117,000	47,200	76,600	2.25	2.51	4,560,000	A.
The year.....	149,000	15,500	67,600	1.99	26.98	48,900,000	
1915-16.							
October.....	45,900	34,000	38,200	1.13	1.30	2,350,000	A.
November.....	38,000	29,500	35,000	1.03	1.15	2,080,000	A.
December.....	29,500	21,500	25,400	.75	.86	1,560,000	A.
January.....	20,500	13,000	16,300	.48	.55	1,000,000	A.
February.....	16,500	12,000	13,700	.40	.43	788,000	A.
March.....	33,400	16,000	23,000	.68	.78	1,410,000	A.
April.....	57,700	34,000	45,000	1.32	1.47	2,680,000	A.
May.....	118,000	59,800	99,400	2.92	3.37	6,110,000	A.
June.....	306,000	119,000	192,000	5.65	6.30	11,400,000	B.
July.....	304,000	192,000	262,000	7.70	8.88	16,100,000	B.
August.....	185,000	104,000	136,000	4.00	4.61	8,360,000	A.
September.....	108,000	59,100	86,700	2.55	2.84	5,160,000	A.
The year.....	306,000	12,000	81,300	2.39	32.54	59,000,000	
1916-17.							
October.....	57,700	34,700	42,300	1.24	1.43	2,600,000	A.
November.....	34,300	23,100	29,100	.85	.95	1,730,000	A.
December.....	23,100	15,600	19,600	.58	.67	1,210,000	A.
January.....	15,300	12,500	14,100	.41	.47	867,000	A.
February.....	13,000	11,400	12,400	.36	.37	689,000	A.
March.....	11,400	9,600	10,600	.31	.36	652,000	A.
April.....	27,500	10,200	17,300	.51	.57	1,030,000	A.
May.....	168,000	28,200	79,200	2.33	2.69	4,870,000	A.
June.....	220,000	173,000	198,000	5.82	6.49	11,800,000	B.
July.....	224,000	164,000	205,000	6.03	6.95	12,600,000	B.
August.....	158,000	98,000	115,000	3.38	3.90	7,070,000	A.
September.....	96,200	58,000	68,600	2.02	2.25	4,080,000	A.
The year.....	224,000	9,600	67,900	2.00	27.10	49,200,000	

Monthly discharge of Columbia River at Trail, British Columbia—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....	64,800	37,000	53,500	1.57	1.81	3,290,000	A.
November.....	36,000	25,300	29,600	.87	.97	1,760,000	A.
December.....	31,200	23,600	27,100	.80	.92	1,670,000	A.
January.....	31,800	24,100	27,900	.82	.95	1,720,000	A.
February.....	23,900	18,200	20,800	.61	.64	1,160,000	A.
March.....	26,200	15,200	18,400	.54	.62	1,130,000	A.
April.....	62,800	25,200	41,500	1.22	1.36	2,470,000	A.
May.....	134,000	67,000	113,000	3.32	3.83	6,950,000	A.
June.....	274,000	113,000	200,000	5.88	6.56	11,900,000	B.
July.....	243,000	144,000	186,000	5.47	6.31	11,400,000	B.
August.....	140,000	88,300	113,000	3.32	3.83	6,950,000	A.
September.....	93,200	67,000	75,900	2.23	2.49	4,520,000	A.
The year.....	274,000	16,200	75,900	2.23	30.29	54,900,000	
1918-19.							
October.....	66,200	43,100	53,600	1.58	1.82	3,300,000	A.
November.....	42,200	28,500	34,500	1.01	1.13	2,050,000	A.
December.....	.....	.....	25,800	.76	.88	1,590,000	D.
January.....	25,800	13,000	19,900	.59	.68	1,220,000	A.
February.....	24,100	18,000	21,100	.62	.65	1,170,000	A.
March.....	18,500	15,200	16,200	.48	.55	996,000	A.
April.....	61,200	19,000	34,400	1.01	1.13	2,050,000	A.
May.....	204,000	64,800	107,000	3.15	3.63	6,580,000	B.
June.....	229,000	167,000	195,000	5.74	6.40	11,600,000	B.
July.....	226,000	139,000	179,000	5.27	6.08	11,000,000	B.
August.....	138,000	97,000	119,000	3.50	4.04	7,320,000	A.
September.....	96,000	53,000	72,500	2.13	2.38	4,310,000	A.
The year.....	229,000	13,000	73,200	2.15	29.37	53,200,000	

NOTE.—Maximum discharge during period of record, 312,000 second-feet June 14-15, 1913; minimum discharge, 9,600 second-feet Mar. 28, 1917. All computations, except yearly totals, made by Hydrometric Survey of British Columbia.

Yearly discharge of Columbia River at Trail, British Columbia.

Year ending Sept. 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
			Mean.					Month.
1914.....	222,000	15,500	16,800	Feb.....	74,900	2.20	29.82	54,200,000
1915.....	149,000	15,500	16,400	Feb.....	67,600	1.99	26.98	48,900,000
1916.....	306,000	12,000	13,700	Feb.....	81,300	2.39	32.54	59,000,000
1917.....	224,000	9,600	10,600	Mar.....	67,900	2.00	27.10	49,200,000
1918.....	274,000	16,200	18,400	Mar.....	75,900	2.23	30.29	54,900,000
1919.....	229,000	13,000	16,200	Mar.....	73,200	2.15	29.37	53,200,000
The period..	306,000	9,600	10,600	Mar., 1917	73,500	2.16	29.35	53,200,000

COLUMBIA RIVER AT WENATCHEE AND VERNITA (62).

Staff gages prior to January 1, 1916, about 1 mile above highway bridge at Wenatchee; from January 1 to December 31, 1916, at highway bridge at Wenatchee; January 1-13, 1917, at Beverly; beginning January 14, 1917, in sec. 11, T. 13 N., R. 24 E., at Richmond ferry, half a mile north of Vernita and 6 miles below Priest Rapids.

Water is diverted from main stream and tributaries for irrigation.

Drainage area, at Wenatchee, 88,500 square miles; at Vernita, 95,500 square miles. Areas in United States measured on topographic maps and United States Geological Survey maps, scale 1:500,000. Areas in British Columbia measured on Department of the Interior Railway Belt maps, scale 1:500,000; Department of Mines, West Kootenay sheet, scale 1:253,440; and Department of Lands map, scale, 1:1,125,000.

Monthly discharge of Columbia River at Wenatchee and Vernita.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1913.							
May.....	336,000	149,000	209,000	2.36	2.72	12,900,000	A.
June.....	528,000	351,000	480,000	5.42	6.05	28,600,000	A.
July.....	472,000	233,000	323,000	3.65	4.21	19,900,000	A.
August.....	230,000	.....	174,000	1.97	2.27	10,700,000	A.
September.....	130,000	84,200	116,000	1.31	1.46	6,900,000	A.
The period.....	.....	.....	.....	.....	.....	79,000,000	
1913-14.							
October.....	83,300	64,000	70,500	.797	.92	4,330,000	A.
November.....	64,000	56,700	60,200	.680	.76	3,580,000	A.
December.....	56,700	39,400	46,600	.527	.61	2,870,000	A.
January.....	44,200	.....	41,500	.469	.54	2,550,000	A.
February.....	46,600	.....	39,600	.447	.47	2,200,000	A.
March.....	66,000	46,600	55,000	.621	.72	3,380,000	A.
April.....	160,000	58,900	111,000	1.25	1.40	6,600,000	A.
May.....	319,000	160,000	249,000	2.81	3.24	15,300,000	A.
June.....	343,000	305,000	332,000	3.75	4.18	19,200,000	A.
July.....	305,000	209,000	282,000	3.19	3.68	17,300,000	A.
August.....	203,000	109,000	147,000	1.66	1.91	9,040,000	A.
September.....	108,000	69,800	87,600	.990	1.10	5,210,000	A.
The year.....	343,000	.....	127,000	1.44	19.53	91,600,000	
1914-15.							
October.....	71,600	68,000	69,900	.790	.91	4,300,000	A.
November.....	73,400	68,000	71,500	.808	.90	4,250,000	A.
December.....	71,600	38,200	56,500	.638	.74	3,470,000	A.
January.....	38,200	.....	35,800	.405	.47	2,200,000	A.
February.....	34,600	.....	32,600	.368	.38	1,810,000	A.
March.....	54,500	34,600	41,200	.466	.54	2,530,000	A.
April.....	136,000	56,700	98,200	1.11	1.24	5,840,000	A.
May.....	232,000	140,000	189,000	2.14	2.47	11,600,000	A.
June.....	228,000	190,000	202,000	2.28	2.54	12,000,000	A.
July.....	206,000	183,000	196,000	2.21	2.55	12,100,000	A.
August.....	187,000	152,000	172,000	1.94	2.24	10,600,000	A.
September.....	151,000	66,000	104,000	1.18	1.32	6,190,000	A.
The year.....	232,000	.....	106,000	1.20	16.30	76,900,000	
1915-16.							
October.....	66,000	51,800	56,000	.633	.73	3,440,000	A.
November.....	57,000	51,800	54,500	.616	.69	3,240,000	A.
December.....	49,600	.....	46,000	.520	.60	2,830,000	A.
January.....	.....	.....	32,400	.366	.42	1,990,000	A.
February.....	46,700	.....	36,200	.409	.44	2,080,000	A.
March.....	110,000	43,800	70,400	.795	.92	4,330,000	A.
April.....	168,000	110,000	135,000	1.53	1.71	8,030,000	A.
May.....	264,000	172,000	241,000	2.72	3.14	14,800,000	A.
June.....	520,000	264,000	361,000	4.08	4.55	21,500,000	A.
July.....	520,000	328,000	459,000	5.19	5.98	28,200,000	A.
August.....	319,000	151,000	219,000	2.47	2.85	13,500,000	A.
September.....	150,000	90,700	127,000	1.44	1.61	7,560,000	A.
The year.....	520,000	.....	153,000	1.73	23.64	112,000,000	
1916-17.							
October.....	87,700	54,900	67,700	.765	.88	4,160,000	A.
November.....	.....	.....	48,200	.545	.61	2,870,000	A.
December.....	41,600	.....	37,200	.420	.48	2,290,000	A.
January.....	31,300	24,600	29,400	.308	.36	1,810,000	A.
February.....	32,100	26,600	30,400	.318	.33	1,690,000	A.
March.....	33,200	27,100	28,900	.303	.35	1,780,000	A.
April.....	88,300	32,600	55,000	.576	.64	3,270,000	A.
May.....	373,000	91,100	191,000	2.00	2.31	11,700,000	A.
June.....	430,000	380,000	410,000	4.29	4.79	24,400,000	A.
July.....	414,000	259,000	356,000	3.73	4.30	21,900,000	A.
August.....	252,000	133,000	168,000	1.76	2.03	10,300,000	A.
September.....	131,000	78,400	95,800	1.00	1.12	5,700,000	A.
The year.....	430,000	24,600	127,000	1.34	18.20	91,900,000	

Monthly discharge of Columbia River at Wenatchee and Vernita—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....	82,000	55,200	72,100	0.755	0.87	4,430,000	A.
November.....	53,800	41,300	45,700	.479	.53	2,720,000	A.
December.....	89,200	42,500	50,800	.532	.61	3,120,000	A.
January.....	120,000	74,000	99,900	1.05	1.21	6,140,000	A.
February.....	71,400	50,300	61,400	.643	.67	3,410,000	A.
March.....	66,300	45,100	50,300	.527	.61	3,090,000	A.
April.....	145,000	69,700	103,000	1.08	1.20	6,130,000	A.
May.....	274,000	152,000	233,000	2.44	2.81	14,300,000	A.
June.....	430,000	227,000	335,000	3.51	3.92	19,900,000	A.
July.....	405,000	206,000	286,000	2.89	3.45	17,600,000	A.
August.....	200,000	125,000	154,000	1.61	1.86	9,470,000	A.
September.....	124,000	86,500	99,400	1.04	1.16	5,910,000	A.
The year.....	430,000	41,300	133,000	1.39	18.90	96,200,000	
1918-19.							
October.....	85,600	63,000	73,200	.766	.88	4,500,000	A.
November.....	63,000	45,100	53,700	.562	.63	3,200,000	A.
December.....	48,400	41,300	45,100	.472	.54	2,770,000	A.
January.....	61,400	.....	40,700	.426	.49	2,500,000	A.
February.....	60,600	41,900	50,700	.531	.55	2,820,000	A.
March.....	57,400	38,800	46,100	.483	.56	2,830,000	A.
April.....	156,000	58,200	96,600	1.01	1.13	5,750,000	A.
May.....	366,000	164,000	221,000	2.31	2.66	13,600,000	A.
June.....	368,000	298,000	335,000	3.51	3.92	19,900,000	A.
July.....	343,000	188,000	261,000	2.73	3.15	16,000,000	A.
August.....	185,000	120,000	154,000	1.61	1.86	9,470,000	A.
September.....	117,000	69,700	92,200	.965	1.08	5,490,000	A.
The year.....	368,000	.....	123,000	1.29	17.45	88,800,000	

NOTE.—Maximum discharge during period of record, 528,000 second-feet June 15 and 16, 1913; maximum discharge during flood of June 7, 1894, estimated at 710,000 second-feet; minimum discharge, 23,900 second-feet (current-meter measurement) Jan. 31, 1917. Gage-height record obtained at Wenatchee for November, 1916, unreliable; excellent record obtained at Priest Rapids used for that month.

Yearly discharge of Columbia River at Wenatchee and Vernita.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maxi- mum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre- feet.	
		Day.	Calendar month.					
			Mean.					Month.
1914.....	343,000	.....	39,600	Feb.....	127,000	1.44	19.53	91,600,000
1915.....	232,000	.....	32,600	Feb.....	106,000	1.20	16.30	76,900,000
1916.....	520,000	.....	32,400	Jan.....	153,000	1.73	23.64	112,000,000
1917.....	430,000	24,600	28,900	Mar.....	127,000	1.34	18.20	91,900,000
1918.....	430,000	41,300	45,700	Nov.....	133,000	1.39	18.90	96,200,000
1919.....	368,000	.....	40,700	Jan.....	123,000	1.29	17.45	88,800,000
The period.	520,000	.....	28,900	Mar., 1917.	128,000	1.40	19.00	92,900,000

COLUMBIA RIVER AT THE DALLES (63).

Staff gage at Umatilla June 1 to December 6, 1878; above Cascades, 20 miles below The Dalles, December 12, 1878, to October 9, 1879; at The Dalles October 10, 1879, to June 30, 1881; above Cascades July 1, 1881, to January 31, 1892; at viaduct at Regulator Dock at The Dalles since February 1, 1892. Gage above Cascades used since February 1, 1892, during periods in which the gage at the viaduct at Regulator Dock at The Dalles was not used.

There are numerous diversions above the station for irrigation.

Drainage area, 237,000 square miles; measured on General Land Office maps.

Monthly discharge of Columbia River at The Dalles, Oreg.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1878.							
June.....	485,000	370,000	426,000	1.80	2.01	25,300,000	C.
July.....	370,000	219,000	273,000	1.15	1.33	16,800,000	C.
August.....	222,000	155,000	184,000	.776	.89	11,300,000	C.
September.....	151,000	93,200	124,000	.523	.58	7,380,000	C.
The period.....						60,800,000	
1878-79.							
October.....	100,000	82,900	89,800	.379	.44	5,520,000	C.
November.....	93,200	76,200	83,500	.352	.39	4,970,000	C.
December.....	115,000	71,000	91,000	.384	.44	5,600,000	C.
January.....	71,000	61,200	65,900	.278	.32	4,050,000	B.
February.....	217,000	59,600	87,200	.368	.38	4,840,000	B.
March.....	317,000	139,000	181,000	.764	.88	11,100,000	B.
April.....	453,000	313,000	360,000	1.52	1.70	21,400,000	B.
May.....	559,000	325,000	395,000	1.67	1.92	24,300,000	B.
June.....	643,000	559,000	612,000	2.58	2.88	36,400,000	B.
July.....	609,000	381,000	501,000	2.11	2.43	30,800,000	B.
August.....	379,000	209,000	275,000	1.16	1.34	16,900,000	B.
September.....	204,000	119,000	154,000	.650	.73	9,160,000	B.
The year.....	643,000	59,600	242,000	1.02	13.85	175,000,000	
1879-80.							
October.....	124,000	91,000	110,000	.464	.53	6,760,000	B.
November.....	93,000	75,400	85,400	.360	.40	5,080,000	B.
December.....	99,000	69,000	85,400	.360	.42	5,250,000	B.
January.....	112,000	81,100	98,400	.415	.48	6,050,000	B.
February.....	95,000	68,300	77,200	.326	.35	4,440,000	B.
March.....	97,000	68,300	75,200	.317	.37	4,620,000	B.
April.....	232,000	87,400	151,000	.637	.71	8,980,000	B.
May.....	524,000	255,000	404,000	1.70	1.96	24,800,000	B.
June.....	914,000	536,000	698,000	2.95	3.29	41,500,000	B.
July.....	914,000	629,000	793,000	3.35	3.86	48,800,000	B.
August.....	607,000	258,000	386,000	1.63	1.88	23,700,000	B.
September.....	254,000	154,000	198,000	.835	.93	11,800,000	B.
The year.....	914,000	68,300	264,000	1.11	15.18	192,000,000	
1880-81.							
October.....	152,000	113,000	131,000	.553	.64	8,060,000	B.
November.....	121,000	83,800	104,000	.439	.49	6,190,000	B.
December.....	93,000	75,400	80,700	.341	.39	4,960,000	B.
January.....	195,000	73,800	107,000	.451	.52	6,580,000	B.
February.....	361,000	77,800	211,000	.890	.93	11,700,000	B.
March.....	318,000	170,000	221,000	.932	1.07	13,600,000	B.
April.....	495,000	278,000	386,000	1.63	1.82	23,000,000	B.
May.....	449,000	405,000	426,000	1.80	2.08	26,200,000	B.
June.....	598,000	426,000	546,000	2.30	2.57	32,500,000	B.
July.....	556,000	313,000	431,000	1.82	2.10	26,500,000	B.
August.....	311,000	181,000	244,000	1.03	1.19	15,000,000	B.
September.....	178,000	124,000	141,000	.595	.66	8,390,000	B.
The year.....	598,000	73,800	252,000	1.06	14.46	183,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg.—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1881-82.							
October.....	130,000	99,100	110,000	0.464	0.53	6,760,000	B.
November.....	134,000	91,100	112,000	.473	.53	6,660,000	B.
December.....	92,200	78,000	86,400	.365	.42	5,310,000	B.
January.....	94,400	60,400	78,400	.331	.38	4,820,000	B.
February.....	92,200	60,400	66,700	.281	.29	3,700,000	B.
March.....	183,000	75,000	95,600	.403	.46	5,880,000	B.
April.....	262,000	192,000	229,000	.966	1.08	13,600,000	B.
May.....	542,000	210,000	336,000	1.42	1.64	20,700,000	B.
June.....	883,000	540,000	770,000	3.25	3.63	45,800,000	B.
July.....	643,000	321,000	477,000	2.01	2.32	29,300,000	B.
August.....	313,000	200,000	263,000	1.11	1.28	16,200,000	B.
September.....	197,000	118,000	150,000	.633	.71	8,930,000	B.
The year.....	883,000	60,400	232,000	.979	13.27	168,000,000	
1882-83.							
October.....	119,000	102,000	110,000	.464	.53	6,760,000	B.
November.....	113,000	79,000	94,400	.398	.44	5,620,000	B.
December.....	197,000	78,000	121,000	.511	.59	7,440,000	B.
January.....	148,000	58,800	87,100	.368	.42	5,360,000	B.
February.....	148,000	63,600	87,500	.369	.38	4,860,000	B.
March.....	298,000	121,000	178,000	.751	.87	10,900,000	B.
April.....	283,000	167,000	197,000	.831	.93	11,700,000	B.
May.....	525,000	195,000	404,000	1.70	1.96	24,800,000	B.
June.....	573,000	494,000	534,000	2.25	2.51	31,800,000	B.
July.....	542,000	244,000	397,000	1.68	1.94	24,400,000	B.
August.....	237,000	157,000	202,000	.852	.98	12,400,000	B.
September.....	152,000	103,000	126,000	.532	.59	7,500,000	B.
The year.....	573,000	58,800	212,000	.895	12.14	154,000,000	
1883-84.							
October.....	100,000	79,000	90,800	.383	.44	5,580,000	B.
November.....	85,600	69,000	74,300	.313	.35	4,420,000	B.
December.....	84,500	64,400	73,500	.310	.36	4,520,000	B.
January.....	94,400	58,800	71,900	.303	.35	4,420,000	B.
February.....	163,000	45,800	71,900	.303	.33	4,140,000	B.
March.....	121,000	87,800	105,000	.443	.51	6,460,000	B.
April.....	286,000	117,000	203,000	.857	.96	12,100,000	B.
May.....	607,000	250,000	404,000	1.70	1.96	24,800,000	B.
June.....	698,000	588,000	648,000	2.73	3.05	38,600,000	B.
July.....	573,000	298,000	403,000	1.70	1.96	24,800,000	A.
August.....	300,000	194,000	255,000	1.08	1.24	15,700,000	A.
September.....	195,000	123,000	166,000	.700	.78	9,880,000	A.
The year.....	698,000	45,800	214,000	.903	12.29	155,000,000	
1884-85.							
October.....	150,000	112,000	133,000	.561	.65	8,180,000	A.
November.....	159,000	116,000	135,000	.570	.64	8,030,000	A.
December.....	110,000	44,300	80,600	.340	.39	4,960,000	B.
January.....	123,000	76,000	93,400	.394	.45	5,740,000	B.
February.....	190,000	95,400	164,000	.692	.72	9,110,000	A.
March.....	221,000	149,000	189,000	.797	.92	11,600,000	A.
April.....	290,000	215,000	259,000	1.09	1.22	15,400,000	A.
May.....	434,000	237,000	372,000	1.57	1.81	22,900,000	A.
June.....	482,000	388,000	445,000	1.88	2.10	26,500,000	A.
July.....	447,000	237,000	340,000	1.43	1.65	20,900,000	A.
August.....	233,000	183,000	203,000	.857	.99	12,500,000	A.
September.....	179,000	139,000	155,000	.654	.73	9,220,000	A.
The year.....	482,000	44,300	214,000	.903	12.27	155,000,000	
1885-86.							
October.....	149,000	96,700	122,000	.515	.59	7,500,000	A.
November.....	115,000	92,800	103,000	.435	.49	6,130,000	A.
December.....	110,000	92,800	103,000	.435	.50	6,330,000	A.
January.....	203,000	64,400	101,000	.426	.49	6,210,000	A.
February.....	217,000	140,000	178,000	.751	.78	9,890,000	A.
March.....	134,000	109,000	122,000	.515	.59	7,500,000	A.
April.....	260,000	129,000	209,000	.882	.98	12,400,000	A.
May.....	597,000	239,000	342,000	1.44	1.66	21,000,000	A.
June.....	673,000	458,000	577,000	2.43	2.71	34,300,000	A.
July.....	456,000	266,000	351,000	1.48	1.71	21,600,000	A.
August.....	262,000	150,000	201,000	.848	.98	12,400,000	A.
September.....	147,000	101,000	125,000	.527	.59	7,440,000	A.
The year.....	673,000	64,400	211,000	.890	12.07	153,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg.—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1886-87.							
October.....	99,300	76,000	85,900	0.362	0.42	5,280,000	B.
November.....	78,000	62,800	69,700	.294	.33	4,150,000	B.
December.....	90,400	62,000	75,300	.318	.37	4,630,000	B.
January.....	122,000	86,800	99,100	.418	.48	6,090,000	B.
February.....	106,000	66,100	75,300	.318	.33	4,180,000	B.
March.....	258,000	73,000	176,000	.743	.86	10,800,000	A.
April.....	282,000	235,000	259,000	1.09	1.22	15,400,000	A.
May.....	720,000	319,000	422,000	1.78	2.05	25,900,000	A.
June.....	896,000	713,000	809,000	3.41	3.80	48,100,000	A.
July.....	760,000	403,000	585,000	2.47	2.85	36,000,000	A.
August.....	393,000	228,000	289,000	1.22	1.41	17,800,000	A.
September.....	221,000	128,000	171,000	.722	.81	10,200,000	A.
The year.....	896,000	62,000	260,000	1.10	14.93	189,000,000	
1887-88.							
October.....	126,000	99,300	114,000	.481	.55	7,010,000	A.
November.....	117,000	90,400	100,000	.422	.47	5,950,000	A.
December.....	115,000	88,000	99,200	.419	.48	6,100,000	B.
January.....	215,000	49,400	80,200	.338	.39	4,930,000	B.
February.....	190,000	123,000	144,000	.608	.66	8,280,000	A.
March.....	137,000	102,000	120,000	.506	.58	7,380,000	A.
April.....	306,000	128,000	189,000	.797	.89	11,200,000	A.
May.....	412,000	282,000	362,000	1.53	1.76	22,300,000	A.
June.....	564,000	420,000	515,000	2.17	2.42	30,600,000	A.
July.....	451,000	262,000	338,000	1.43	1.65	20,800,000	A.
August.....	256,000	190,000	213,000	.899	1.04	13,100,000	A.
September.....	188,000	120,000	153,000	.646	.72	9,100,000	A.
The year.....	564,000	49,400	202,000	.852	11.61	147,000,000	
1888-89.							
October.....	119,000	89,200	102,000	.430	.50	6,270,000	A.
November.....	109,000	82,300	93,200	.393	.44	5,550,000	B.
December.....	94,100	78,000	85,500	.361	.42	5,260,000	B.
January.....	76,000	62,800	66,400	.280	.32	4,080,000	B.
February.....	64,400	57,400	63,700	.269	.28	3,540,000	B.
March.....	110,000	63,600	88,700	.374	.43	5,450,000	B.
April.....	179,000	110,000	152,000	.641	.72	9,040,000	A.
May.....	294,000	188,000	254,000	1.07	1.23	15,600,000	A.
June.....	302,000	215,000	268,000	1.13	1.26	15,900,000	A.
July.....	213,000	167,000	183,000	.772	.89	11,300,000	A.
August.....	172,000	119,000	149,000	.629	.73	9,160,000	A.
September.....	120,000	78,000	96,400	.407	.45	5,740,000	B.
The year.....	302,000	57,400	134,000	.565	7.67	96,900,000	
1889-90.							
October.....	95,400	79,000	87,500	.369	.43	5,380,000	B.
November.....	88,000	69,000	77,400	.327	.36	4,610,000	B.
December.....	70,000	54,800	64,600	.273	.31	3,970,000	B.
January.....	67,000	41,900	51,400	.217	.25	3,160,000	C.
February.....	197,000	62,000	117,000	.494	.51	6,500,000	A.
March.....	179,000	59,600	120,000	.596	.58	7,380,000	A.
April.....	300,000	145,000	192,000	.810	.90	11,400,000	A.
May.....	633,000	325,000	559,000	2.36	2.72	34,400,000	A.
June.....	532,000	388,000	437,000	1.84	2.05	26,000,000	A.
July.....	381,000	248,000	326,000	1.38	1.59	20,000,000	A.
August.....	246,000	157,000	194,000	.819	.94	11,900,000	A.
September.....	152,000	90,400	121,000	.511	.57	7,200,000	A.
The year.....	633,000	41,900	196,000	.827	11.21	142,000,000	
1890-91.							
October.....	95,400	83,400	89,100	.376	.43	5,480,000	B.
November.....	84,500	73,000	77,600	.327	.36	4,620,000	B.
December.....	74,000	65,200	69,600	.294	.34	4,280,000	B.
January.....	72,000	60,400	65,900	.278	.32	4,050,000	B.
February.....	71,000	58,800	62,600	.264	.27	3,480,000	B.
March.....	108,000	57,400	73,700	.311	.36	4,530,000	B.
April.....	219,000	88,000	137,000	.578	.64	8,150,000	A.
May.....	441,000	222,000	342,000	1.44	1.66	21,000,000	A.
June.....	448,000	379,000	420,000	1.77	1.98	25,000,000	A.
July.....	370,000	254,000	306,000	1.29	1.49	18,800,000	A.
August.....	250,000	159,000	205,000	.865	1.00	12,600,000	A.
September.....	159,000	108,000	132,000	.557	.62	7,860,000	A.
The year.....	448,000	57,400	165,000	.696	9.47	120,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg.—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acro-feet.	
1891-92.							
October.....	108,000	80,100	88,300	0.373	0.43	5,430,000	B
November.....	132,000	84,500	108,000	.456	.51	6,430,000	A.
December.....	110,000	90,400	99,800	.421	.49	6,140,000	B.
January.....	95,400	68,000	79,000	.333	.38	4,860,000	B.
February.....	84,700	66,200	73,000	.308	.33	4,200,000	B.
March.....	164,000	84,700	127,000	.536	.62	7,810,000	A.
April.....	177,000	128,000	153,000	.646	.72	9,100,000	A.
May.....	568,000	166,000	298,000	1.26	1.45	18,300,000	A.
June.....	607,000	481,000	544,000	2.30	2.57	32,400,000	A.
July.....	583,000	281,000	447,000	1.89	2.18	27,500,000	A.
August.....	278,000	160,000	219,000	.886	1.02	12,900,000	A.
September.....	159,000	131,000	145,000	.612	.68	8,630,000	A.
The year.....	607,000	66,200	198,000	.835	11.38	144,000,000	
1892-93.							
October.....	131,000	96,000	111,000	.468	.54	6,820,000	A.
November.....	118,000	91,000	98,200	.414	.46	5,840,000	B.
December.....	99,000	69,000	86,000	.363	.42	5,290,000	B.
January.....	93,000	69,800	77,700	.328	.38	4,780,000	B.
February.....	105,000	61,300	81,900	.346	.36	4,550,000	B.
March.....	115,000	63,400	71,000	.300	.35	4,370,000	B.
April.....	249,000	130,000	170,000	.717	.80	10,100,000	A.
May.....	613,000	252,000	441,000	1.86	2.14	27,100,000	A.
June.....	679,000	534,000	597,000	2.52	2.81	35,500,000	A.
July.....	528,000	390,000	465,000	1.96	2.26	28,600,000	A.
August.....	381,000	185,000	273,000	1.15	1.33	16,800,000	A.
September.....	181,000	120,000	150,000	.633	.71	8,930,000	A.
The year.....	679,000	61,300	219,000	.924	12.56	159,000,000	
1893-94.							
October.....	150,000	108,000	122,000	.515	.59	7,500,000	A.
November.....	170,000	107,000	142,000	.599	.67	8,450,000	A.
December.....	218,000	118,000	166,000	.700	.81	10,200,000	A.
January.....	219,000	102,000	145,000	.612	.71	8,920,000	A.
February.....	142,000	88,300	114,000	.481	.50	6,330,000	A.
March.....	284,000	113,000	163,000	.688	.79	10,000,000	A.
April.....	465,000	266,000	323,000	1.36	1.52	19,200,000	A.
May.....	1,020,000	395,000	575,000	2.43	2.80	35,400,000	A.
June.....	1,160,000	739,000	970,000	4.09	4.56	57,700,000	B.
July.....	716,000	376,000	553,000	2.33	2.69	34,000,000	A.
August.....	372,000	217,000	271,000	1.14	1.31	16,700,000	A.
September.....	217,000	137,000	175,000	.738	.82	10,400,000	A.
The year.....	1,160,000	88,300	311,000	1.31	17.77	225,000,000	
1894-95.							
October.....	139,000	125,000	133,000	.561	.65	8,180,000	A.
November.....	150,000	129,000	136,000	.574	.64	8,090,000	A.
December.....	140,000	88,000	114,000	.481	.55	7,010,000	A.
January.....	131,000	81,200	102,000	.430	.50	6,270,000	A.
February.....	132,000	80,100	94,000	.397	.41	5,220,000	B.
March.....	137,000	105,000	119,000	.502	.58	7,320,000	A.
April.....	276,000	143,000	182,000	.768	.86	10,800,000	A.
May.....	475,000	281,000	376,000	1.59	1.83	23,100,000	A.
June.....	459,000	342,000	381,000	1.61	1.80	22,700,000	A.
July.....	392,000	264,000	348,000	1.47	1.70	21,400,000	A.
August.....	260,000	148,000	206,000	.869	1.00	12,700,000	A.
September.....	149,000	108,000	129,000	.544	.61	7,680,000	A.
The year.....	475,000	80,100	194,000	.819	11.13	140,000,000	
1895-96.							
October.....	106,000	84,500	96,500	.407	.47	5,930,000	B.
November.....	85,600	74,000	78,600	.332	.37	4,680,000	B.
December.....	79,000	70,000	75,300	.318	.37	4,630,000	B.
January.....	125,000	70,000	90,000	.381	.44	5,550,000	B.
February.....	123,000	81,100	92,600	.391	.42	5,330,000	B.
March.....	212,000	103,000	134,000	.565	.65	8,240,000	A.
April.....	206,000	152,000	180,000	.760	.85	10,700,000	A.
May.....	426,000	205,000	268,000	1.13	1.30	16,500,000	A.
June.....	785,000	481,000	679,000	2.86	3.19	40,400,000	A.
July.....	778,000	386,000	639,000	2.70	3.11	39,300,000	A.
August.....	372,000	191,000	256,000	1.08	1.24	15,700,000	A.
September.....	191,000	114,000	157,000	.662	.74	9,340,000	A.
The year.....	785,000	70,000	229,000	.966	13.15	166,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg.—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1896-97.							
October.....	110,000	78,000	89,300	0.377	0.43	5,490,000	B.
November.....	194,000	78,000	122,000	.515	.57	7,260,000	A.
December.....	212,000	102,000	163,000	.688	.79	10,000,000	A.
January.....	134,000	98,000	115,000	.485	.56	7,070,000	A.
February.....	155,000	98,000	123,000	.519	.54	6,830,000	A.
March.....	208,000	84,500	109,000	.460	.53	6,700,000	A.
April.....	501,000	130,000	299,000	1.26	1.41	17,800,000	A.
May.....	780,000	447,000	624,000	2.63	3.03	38,400,000	A.
June.....	739,000	445,000	540,000	2.28	2.54	32,100,000	A.
July.....	451,000	263,000	372,000	1.57	1.81	22,900,000	A.
August.....	255,000	192,000	210,000	.886	1.02	12,900,000	A.
September.....	188,000	102,000	137,000	.578	.64	8,150,000	A.
The year.....	780,000	78,000	243,000	1.03	13.87	176,000,000	
1897-98.							
October.....	106,000	85,600	97,100	.410	.47	5,970,000	A.
November.....	165,000	82,000	114,000	.481	.54	6,780,000	A.
December.....	168,000	117,000	141,000	.595	.69	8,670,000	A.
January.....	155,000	84,700	113,000	.477	.55	6,950,000	A.
February.....	260,000	82,900	147,000	.620	.65	8,160,000	A.
March.....	181,000	113,000	147,000	.620	.71	9,040,000	A.
April.....	337,000	111,000	201,000	.848	.95	12,000,000	A.
May.....	594,000	328,000	420,000	1.77	2.04	25,800,000	A.
June.....	649,000	547,000	603,000	2.54	2.83	35,900,000	A.
July.....	541,000	300,000	399,000	1.68	1.94	24,500,000	A.
August.....	291,000	202,000	237,000	1.00	1.15	14,600,000	A.
September.....	199,000	116,000	143,000	.603	.67	8,510,000	A.
The year.....	649,000	82,000	230,000	.970	13.19	167,000,000	
1898-99.							
October.....	114,000	85,600	97,400	.411	.47	5,990,000	A.
November.....	87,400	78,600	83,600	.353	.39	4,970,000	A.
December.....	84,700	58,000	68,500	.289	.33	4,210,000	B.
January.....	142,000	71,400	98,500	.416	.48	6,060,000	A.
February.....	130,000	80,200	109,000	.460	.48	6,050,000	A.
March.....	126,000	94,000	106,000	.447	.52	6,520,000	A.
April.....	245,000	120,000	192,000	.810	.90	11,400,000	A.
May.....	469,000	201,000	309,000	1.30	1.50	19,000,000	A.
June.....	787,000	471,000	638,000	2.69	3.00	38,000,000	A.
July.....	727,000	447,000	614,000	2.59	2.99	37,800,000	A.
August.....	435,000	232,000	307,000	1.30	1.50	18,900,000	A.
September.....	230,000	168,000	193,000	.814	.91	11,500,000	A.
The year.....	787,000	58,000	235,000	.992	13.47	170,000,000	
1899-1900.							
October.....	168,000	125,000	140,000	.591	.68	8,610,000	A.
November.....	166,000	112,000	130,000	.549	.61	7,740,000	A.
December.....	194,000	132,000	157,000	.662	.76	9,650,000	A.
January.....	251,000	138,000	168,000	.709	.82	10,300,000	A.
February.....	142,000	103,000	125,000	.527	.55	6,940,000	A.
March.....	230,000	132,000	187,000	.789	.91	11,500,000	A.
April.....	303,000	216,000	272,000	1.15	1.28	16,200,000	A.
May.....	536,000	291,000	450,000	1.90	2.19	27,700,000	A.
June.....	441,000	381,000	411,000	1.73	1.93	24,500,000	A.
July.....	437,000	239,000	323,000	1.36	1.57	19,900,000	A.
August.....	239,000	152,000	187,000	.789	.91	11,500,000	A.
September.....	157,000	120,000	136,000	.574	.64	8,090,000	A.
The year.....	536,000	103,000	224,000	.945	12.85	163,000,000	
1900-1901.							
October.....	137,000	99,000	114,000	.481	.55	7,010,000	A.
November.....	142,000	106,000	125,000	.527	.59	7,440,000	A.
December.....	180,000	111,000	138,000	.582	.67	8,480,000	A.
January.....	160,000	108,000	129,000	.544	.63	7,930,000	A.
February.....	206,000	81,100	122,000	.515	.54	6,780,000	A.
March.....	269,000	152,000	187,000	.789	.91	11,500,000	A.
April.....	211,000	137,000	165,000	.696	.78	9,820,000	A.
May.....	646,000	205,000	429,000	1.81	2.09	26,400,000	A.
June.....	662,000	405,000	516,000	2.18	2.43	30,700,000	A.
July.....	412,000	286,000	340,000	1.43	1.65	20,900,000	A.
August.....	281,000	166,000	219,000	.924	1.07	13,500,000	A.
September.....	165,000	99,000	132,000	.557	.62	7,850,000	A.
The year.....	662,000	81,100	219,000	.924	12.53	158,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg.—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1901-2.							
October.....	101,000	77,000	85,880	0.362	0.42	5,280,000	A.
November.....	94,000	77,000	83,900	.354	.40	4,990,000	A.
December.....	114,000	77,800	92,500	.390	.45	5,690,000	A.
January.....	102,000	70,600	88,300	.373	.43	5,430,000	A.
February.....	140,000	58,000	101,000	.426	.44	5,610,000	A.
March.....	141,000	91,000	110,000	.464	.53	5,760,000	A.
April.....	194,000	88,300	143,000	.603	.67	8,510,000	A.
May.....	635,000	177,000	358,000	1.51	1.74	22,000,000	A.
June.....	644,000	432,000	537,000	2.27	2.53	32,000,000	A.
July.....	483,000	323,000	407,000	1.72	1.98	25,000,000	A.
August.....	315,000	176,000	231,000	.975	1.12	14,200,000	A.
September.....	170,000	99,000	125,000	.527	.59	7,440,000	A.
The year.....	644,000	58,000	197,000	.831	11.30	143,000,000	
1902-3.							
October.....	95,000	76,200	83,600	.353	.41	5,140,000	A.
November.....	93,000	75,400	84,800	.358	.40	5,050,000	A.
December.....	96,000	72,200	84,800	.358	.41	5,210,000	A.
January.....	178,000	85,600	117,000	.494	.57	7,190,000	A.
February.....	125,000	73,800	87,700	.370	.39	4,870,000	A.
March.....	192,000	74,600	97,400	.411	.47	5,990,000	A.
April.....	252,000	160,000	191,000	.806	.90	11,400,000	A.
May.....	374,000	240,000	309,000	1.30	1.50	19,000,000	A.
June.....	787,000	385,000	683,000	2.88	3.21	40,600,000	A.
July.....	642,000	291,000	426,000	1.80	2.08	26,200,000	A.
August.....	286,000	174,000	216,000	.911	1.05	13,300,000	A.
September.....	172,000	130,000	149,000	.629	.70	8,870,000	A.
The year.....	787,000	72,200	211,000	.890	12.09	153,000,000	
1903-4.							
October.....	173,000	135,000	155,000	.654	.75	9,530,000	A.
November.....	142,000	123,000	133,000	.561	.63	7,910,000	A.
December.....	135,000	101,000	122,000	.515	.59	7,500,000	A.
January.....	108,000	89,200	99,600	.420	.48	6,120,000	A.
February.....	165,000	80,200	100,000	.422	.46	5,750,000	A.
March.....	248,000	118,000	168,000	.709	.82	10,300,000	A.
April.....	479,000	164,000	337,000	1.42	1.58	20,100,000	A.
May.....	629,000	445,000	508,000	2.14	2.47	31,200,000	A.
June.....	602,000	467,000	559,000	2.36	2.63	33,300,000	A.
July.....	467,000	261,000	397,000	1.68	1.94	24,400,000	A.
August.....	254,000	147,000	200,000	.844	.97	12,300,000	A.
September.....	143,000	98,000	122,000	.515	.57	7,260,000	A.
The year.....	629,000	80,200	242,000	1.02	13.89	176,000,000	
1904-5.							
October.....	96,000	75,400	84,700	.357	.41	5,210,000	A.
November.....	78,600	68,300	72,600	.306	.34	4,320,000	B.
December.....	78,600	66,900	71,800	.303	.35	4,410,000	B.
January.....	80,200	57,400	66,500	.281	.32	4,090,000	B.
February.....	75,400	52,600	62,900	.265	.28	3,490,000	B.
March.....	130,000	78,600	106,000	.447	.52	6,520,000	A.
April.....	188,000	114,000	131,000	.553	.62	7,800,000	A.
May.....	252,000	172,000	206,000	.869	1.00	12,700,000	A.
June.....	412,000	269,000	357,000	1.51	1.68	21,200,000	A.
July.....	311,000	204,000	246,000	1.04	1.20	15,100,000	A.
August.....	205,000	124,000	175,000	.738	.85	10,800,000	A.
September.....	121,000	77,800	95,500	.403	.45	5,680,000	A.
The year.....	412,000	52,600	140,000	.591	8.02	101,000,000	
1905-6.							
October.....	115,000	92,000	103,000	.435	.50	6,330,000	A.
November.....	93,000	73,800	79,000	.333	.37	4,700,000	B.
December.....	76,200	62,700	67,400	.284	.33	4,140,000	B.
January.....	72,200	59,200	63,500	.268	.31	3,900,000	B.
February.....	102,000	64,100	76,700	.324	.34	4,260,000	B.
March.....	157,000	73,800	92,200	.389	.45	5,670,000	A.
April.....	264,000	165,000	203,000	.857	.96	12,100,000	A.
May.....	345,000	258,000	299,000	1.26	1.45	18,400,000	A.
June.....	374,000	278,000	332,000	1.40	1.56	19,800,000	A.
July.....	300,000	229,000	278,000	1.17	1.35	17,100,000	A.
August.....	223,000	125,000	168,000	.709	.82	10,300,000	A.
September.....	131,000	100,000	115,000	.485	.54	6,840,000	A.
The year.....	374,000	59,200	157,000	.662	8.98	114,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg.—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1906-7.							
October.....	108,000	85,600	91,700	0.387	0.45	5,640,000	A.
November.....	260,000	92,000	136,000	.574	.64	8,090,000	A.
December.....	155,000	105,000	123,000	.519	.60	7,560,000	A.
January.....	142,000	77,800	105,000	.443	.51	6,460,000	A.
February.....	212,000	113,000	158,000	.667	.69	8,780,000	A.
March.....	251,000	129,000	167,000	.705	.81	10,300,000	A.
April.....	289,000	156,000	234,000	.987	1.10	13,900,000	A.
May.....	522,000	248,000	379,000	1.60	1.84	23,300,000	A.
June.....	587,000	481,000	532,000	2.24	2.50	31,700,000	A.
July.....	532,000	305,000	431,000	1.82	2.10	26,500,000	A.
August.....	305,000	178,000	230,000	.970	1.12	14,100,000	A.
September.....	180,000	135,000	162,000	.684	.76	9,640,000	A.
The year.....	587,000	77,800	229,000	.966	13.12	166,000,000	
1907-8.							
October.....	135,000	96,000	116,000	.489	.56	7,130,000	A.
November.....	95,000	83,800	88,100	.372	.42	5,240,000	A.
December.....	118,000	77,800	88,300	.373	.43	5,430,000	A.
January.....	87,400	66,200	75,200	.317	.37	4,620,000	B.
February.....	69,800	59,900	66,200	.279	.30	3,810,000	B.
March.....	225,000	69,800	116,000	.489	.56	7,130,000	A.
April.....	303,000	110,000	183,000	.772	.86	10,900,000	A.
May.....	401,000	269,000	344,000	1.45	1.67	21,200,000	A.
June.....	653,000	399,000	537,000	2.27	2.53	32,000,000	A.
July.....	511,000	316,000	413,000	1.74	2.01	25,400,000	A.
August.....	310,000	159,000	204,000	.861	.99	12,500,000	A.
September.....	155,000	102,000	121,000	.511	.57	7,200,000	A.
The year.....	653,000	59,900	196,000	.827	11.27	143,000,000	
1908-9.							
October.....	102,000	83,800	90,400	.381	.44	5,560,000	A.
November.....	97,000	82,900	88,000	.371	.41	5,240,000	A.
December.....	91,000	66,900	78,300	.330	.38	4,810,000	B.
January.....	275,000	63,400	107,000	.451	.52	6,580,000	A.
February.....	140,000	84,700	103,000	.435	.45	5,720,000	A.
March.....	130,000	92,000	108,000	.456	.53	6,640,000	A.
April.....	187,000	132,000	150,000	.633	.71	8,930,000	A.
May.....	388,000	173,000	231,000	.975	1.12	14,200,000	A.
June.....	675,000	395,000	592,000	2.50	2.79	35,200,000	A.
July.....	555,000	284,000	422,000	1.78	2.05	25,900,000	A.
August.....	283,000	146,000	203,000	.857	.99	12,500,000	A.
September.....	154,000	106,000	129,000	.544	.61	7,680,000	A.
The year.....	675,000	63,400	192,000	.810	11.00	139,000,000	
1909-10.							
October.....	105,000	91,000	101,000	.426	.49	6,210,000	A.
November.....	220,000	90,100	128,000	.540	.60	7,620,000	A.
December.....	198,000	97,000	141,000	.595	.69	8,670,000	A.
January.....	125,000	86,500	108,000	.456	.53	6,640,000	A.
February.....	122,000	79,400	92,400	.390	.41	5,130,000	A.
March.....	392,000	136,000	272,000	1.15	1.33	16,700,000	A.
April.....	435,000	249,000	322,000	1.36	1.52	19,200,000	A.
May.....	566,000	433,000	493,000	2.08	2.40	30,300,000	A.
June.....	485,000	311,000	397,000	1.68	1.87	23,600,000	A.
July.....	307,000	197,000	238,000	1.00	1.15	14,600,000	A.
August.....	197,000	125,000	160,000	.675	.78	9,840,000	A.
September.....	121,000	81,100	93,200	.393	.44	5,550,000	A.
The year.....	566,000	79,400	213,000	.899	12.21	154,000,000	
1910-11.							
October.....	118,000	81,100	102,000	.430	.50	6,270,000	A.
November.....	150,000	104,000	121,000	.511	.57	7,200,000	A.
December.....	138,000	91,000	113,000	.477	.55	6,950,000	A.
January.....	90,100	69,800	79,000	.333	.38	4,860,000	B.
February.....	113,000	63,400	79,200	.334	.35	4,400,000	B.
March.....	154,000	62,700	104,000	.439	.51	6,400,000	A.
April.....	212,000	134,000	154,000	.650	.73	9,160,000	A.
May.....	376,000	215,000	306,000	1.29	1.49	18,800,000	A.
June.....	574,000	347,000	503,000	2.12	2.36	29,900,000	A.
July.....	520,000	258,000	378,000	1.59	1.83	23,200,000	A.
August.....	255,000	136,000	187,000	.789	.91	11,500,000	A.
September.....	135,000	97,000	120,000	.506	.56	7,140,000	A.
The year.....	574,000	62,700	188,000	.793	10.74	136,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg.—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911-12.							
October.....	98,000	75,400	84,900	0.358	0.41	5,220,000	A.
November.....	95,000	73,000	78,100	.330	.37	4,650,000	B.
December.....	77,800	63,400	69,800	.295	.34	4,290,000	B.
January.....	118,000	52,000	80,800	.341	.39	4,970,000	A.
February.....	141,000	85,600	110,000	.464	.50	6,330,000	A.
March.....	111,000	76,200	81,900	.346	.40	5,040,000	A.
April.....	219,000	113,000	181,000	.764	.85	10,800,000	A.
May.....	547,000	225,000	372,000	1.57	1.81	22,900,000	A.
June.....	568,000	471,000	522,000	2.20	2.46	31,100,000	A.
July.....	451,000	218,000	305,000	1.29	1.49	18,800,000	A.
August.....	213,000	143,000	180,000	.759	.88	11,100,000	A.
September.....	156,000	99,000	129,000	.544	.61	7,680,000	A.
The year.....	568,000	52,000	183,000	.772	10.51	133,000,000	
1912-13.							
October.....	99,000	85,600	89,200	.376	.43	5,480,000	A.
November.....	103,000	84,700	93,300	.394	.44	5,550,000	A.
December.....	92,000	70,600	79,300	.335	.39	4,880,000	B.
January.....	87,400	66,900	74,900	.316	.36	4,610,000	B.
February.....	100,000	63,400	76,400	.322	.34	4,240,000	B.
March.....	125,000	73,000	98,100	.414	.48	6,030,000	A.
April.....	308,000	155,000	228,000	.962	1.07	13,600,000	A.
May.....	631,000	246,000	376,000	1.59	1.83	23,100,000	A.
June.....	759,000	583,000	694,000	2.93	3.27	41,300,000	A.
July.....	574,000	275,000	392,000	1.65	1.90	24,100,000	A.
August.....	269,000	157,000	210,000	.886	1.02	12,900,000	A.
September.....	156,000	121,000	141,000	.595	.66	8,390,000	A.
The year.....	759,000	63,400	213,000	.899	12.19	154,000,000	
1913-14.							
October.....	120,000	102,000	110,000	.464	.53	6,760,000	A.
November.....	106,000	98,000	101,000	.426	.48	6,010,000	A.
December.....	103,000	71,400	82,600	.348	.40	5,080,000	A.
January.....	111,000	70,600	95,300	.402	.46	5,860,000	A.
February.....	131,000	77,800	89,800	.379	.39	4,990,000	A.
March.....	178,000	131,000	150,000	.633	.73	9,220,000	A.
April.....	276,000	134,000	218,000	.920	1.03	13,000,000	A.
May.....	493,000	260,000	375,000	1.58	1.82	23,100,000	A.
June.....	461,000	374,000	423,000	1.78	1.99	25,200,000	A.
July.....	367,000	234,000	316,000	1.33	1.53	19,400,000	A.
August.....	226,000	130,000	168,000	.709	.82	10,300,000	A.
September.....	125,000	98,000	109,000	.460	.51	6,490,000	A.
The year.....	493,000	70,600	187,000	.789	10.70	135,000,000	
1914-15.							
October.....	112,000	98,000	104,000	.439	.51	6,400,000	A.
November.....	135,000	105,000	121,000	.511	.57	7,200,000	A.
December.....	114,000	62,000	89,500	.378	.44	5,500,000	B.
January.....	80,200	56,800	70,300	.297	.34	4,320,000	B.
February.....	82,000	65,500	71,100	.300	.31	3,950,000	A.
March.....	117,000	69,800	84,100	.355	.41	5,170,000	A.
April.....	204,000	123,000	167,000	.705	.79	9,940,000	A.
May.....	325,000	197,000	253,000	1.07	1.23	15,600,000	A.
June.....	328,000	220,000	266,000	1.12	1.25	15,800,000	A.
July.....	239,000	199,000	224,000	.945	1.09	13,800,000	A.
August.....	199,000	165,000	185,000	.781	.90	11,400,000	A.
September.....	164,000	82,000	122,000	.515	.57	7,260,000	A.
The year.....	328,000	56,800	147,000	.620	8.41	106,000,000	
1915-16.							
October.....	85,600	73,000	77,200	.326	.38	4,750,000	A.
November.....	95,000	75,400	84,300	.356	.40	5,020,000	A.
December.....	104,000	76,200	85,600	.361	.42	5,260,000	A.
January.....	100,000	57,000	70,700	.298	.34	4,350,000	B.
February.....	223,000	74,600	133,000	.661	.71	7,650,000	A.
March.....	286,000	115,000	198,000	.835	.96	12,200,000	A.
April.....	332,000	226,000	268,000	1.13	1.26	15,900,000	A.
May.....	463,000	327,000	390,000	1.65	1.90	24,000,000	A.
June.....	716,000	388,000	532,000	2.24	2.50	31,700,000	A.
July.....	727,000	394,000	599,000	2.53	2.92	36,800,000	A.
August.....	385,000	176,000	259,000	1.09	1.26	15,900,000	A.
September.....	174,000	121,000	156,000	.658	.73	9,280,000	A.
The year.....	727,000	57,000	238,000	1.00	13.78	173,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg.—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1916-17.							
October.....	120,000	89,200	101,000	0.426	0.49	6,210,000	A.
November.....	95,000	77,000	84,600	.357	.40	5,030,000	A.
December.....	81,100	63,400	74,200	.313	.36	4,560,000	A.
January.....	74,600	56,800	66,500	.281	.32	4,090,000	B.
February.....	73,000	62,000	68,300	.288	.30	3,790,000	B.
March.....	90,100	64,800	69,900	.295	.34	4,300,000	A.
April.....	286,000	93,000	178,000	.751	.84	10,600,000	A.
May.....	657,000	233,000	391,000	1.65	1.90	24,000,000	A.
June.....	727,000	594,000	657,000	2.77	3.09	39,100,000	A.
July.....	644,000	308,000	478,000	2.02	2.33	29,400,000	A.
August.....	297,000	163,000	204,000	.861	.99	12,500,000	A.
September.....	159,000	103,000	123,000	.519	.58	7,320,000	A.
The year.....	727,000	56,800	210,000	.886	11.94	151,000,000	
1917-18.							
October.....	111,000	87,400	101,000	.426	.49	6,210,000	B.
November.....	85,600	70,600	77,200	.326	.36	4,590,000	A.
December.....	302,000	78,600	129,000	.544	.63	7,930,000	A.
January.....	313,000	155,000	216,000	.911	1.05	13,300,000	A.
February.....	159,000	105,000	132,000	.557	.58	7,330,000	A.
March.....	197,000	99,000	127,000	.536	.62	7,810,000	A.
April.....	248,000	165,000	208,000	.878	.98	12,400,000	A.
May.....	401,000	246,000	344,000	1.45	1.67	21,200,000	A.
June.....	578,000	311,000	476,000	2.01	2.24	28,300,000	A.
July.....	518,000	246,000	339,000	1.43	1.65	20,800,000	A.
August.....	237,000	141,000	182,000	.768	.88	11,200,000	A.
September.....	140,000	108,000	121,000	.511	.57	7,200,000	A.
The year.....	578,000	70,600	205,000	.865	11.72	148,000,000	
1918-19.							
October.....	110,000	93,000	103,000	.435	.50	6,330,000	A.
November.....	92,000	77,000	85,000	.359	.40	5,060,000	A.
December.....	77,000	73,800	75,400	.319	.37	4,640,000	B.
January.....	118,000	60,000	82,000	.346	.40	5,040,000	A.
February.....	103,000	81,100	92,000	.388	.40	5,110,000	A.
March.....	163,000	82,900	106,000	.447	.52	6,520,000	A.
April.....	287,000	163,000	214,000	.903	1.01	12,700,000	A.
May.....	532,000	263,000	336,000	1.42	1.63	20,700,000	A.
June.....	553,000	335,000	403,000	1.70	1.90	24,000,000	A.
July.....	374,000	209,000	285,000	1.20	1.38	17,500,000	A.
August.....	205,000	138,000	170,000	.717	.83	10,400,000	A.
September.....	137,000	85,600	109,000	.460	.51	6,490,000	A.
The year.....	553,000	60,000	172,000	.726	9.85	124,000,000	

NOTE.—Maximum discharge during period of record, 1,170,000 second-feet June 6, 1894; minimum discharge, 41,900 second-feet Jan. 7, 1890.

Yearly discharge of Columbia River at The Dalles, Oreg.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maxi- mum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month					
			Mean.	Month.				
1879.....	643,000	59,600	65,900	Jan.....	242,000	1.02	13.85	175,000,000
1880.....	914,000	68,300	75,200	Mar.....	264,000	1.11	15.18	192,000,000
1881.....	598,000	73,800	80,700	Dec.....	252,000	1.06	14.46	183,000,000
1882.....	883,000	60,400	66,700	Feb.....	232,000	.979	13.27	168,000,000
1883.....	573,000	58,800	87,100	Jan.....	212,000	.895	12.14	154,000,000
1884.....	698,000	45,800	71,900	Jan., Feb.	214,000	.903	12.29	155,000,000
1885.....	482,000	44,300	80,600	Dec.....	214,000	.903	12.27	155,000,000
1886.....	673,000	64,400	101,000	Jan.....	211,000	.890	12.07	153,000,000
1887.....	896,000	62,000	69,700	Nov.....	260,000	1.10	14.93	189,000,000
1888.....	564,000	49,400	80,200	Jan.....	202,000	.852	11.61	147,000,000
1889.....	302,000	57,400	63,700	Feb.....	134,000	.565	7.67	96,900,000
1890.....	633,000	41,900	51,400	Jan.....	196,000	.827	11.21	142,000,000
1891.....	448,000	57,400	62,600	Feb.....	165,000	.696	9.47	120,000,000
1892.....	607,000	66,200	73,000	Feb.....	198,000	.835	11.38	144,000,000
1893.....	679,000	61,300	71,000	Mar.....	219,000	.924	12.56	159,000,000
1894.....	1,160,000	88,300	114,000	Feb.....	311,000	1.31	17.77	225,000,000
1895.....	475,000	80,100	94,000	Feb.....	194,000	.819	11.13	140,000,000
1896.....	785,000	70,000	75,300	Dec.....	229,000	.966	13.15	166,000,000
1897.....	780,000	78,000	89,300	Oct.....	243,000	1.03	13.87	176,000,000
1898.....	649,000	82,000	97,100	Oct.....	230,000	.970	13.19	167,000,000
1899.....	787,000	58,000	68,500	Dec.....	235,000	.992	13.47	170,000,000
1900.....	536,000	103,000	125,000	Feb.....	224,000	.945	12.85	163,000,000
1901.....	662,000	81,100	114,000	Oct.....	219,000	.924	12.53	158,000,000
1902.....	644,000	58,000	83,900	Nov.....	197,000	.831	11.30	143,000,000
1903.....	787,000	72,200	83,600	Oct.....	211,000	.890	12.09	153,000,000
1904.....	629,000	80,200	99,600	Jan.....	242,000	1.02	13.89	176,000,000
1905.....	412,000	52,600	62,900	Feb.....	140,000	.591	8.02	101,000,000
1906.....	374,000	59,200	63,500	Jan.....	157,000	.662	8.98	114,000,000
1907.....	587,000	77,800	91,700	Oct.....	229,000	.966	13.12	166,000,000
1908.....	653,000	59,900	66,200	Feb.....	196,000	.827	11.27	143,000,000
1909.....	675,000	63,400	78,300	Dec.....	192,000	.810	11.00	139,000,000
1910.....	566,000	79,400	92,400	Feb.....	213,000	.899	12.21	154,000,000
1911.....	574,000	62,700	79,000	Jan.....	188,000	.793	10.74	136,000,000
1912.....	568,000	52,000	69,800	Dec.....	183,000	.772	10.51	133,000,000
1913.....	759,000	63,400	74,900	Jan.....	213,000	.899	12.19	154,000,000
1914.....	493,000	70,600	82,600	Dec.....	187,000	.789	10.70	135,000,000
1915.....	328,000	56,800	70,300	Jan.....	147,000	.620	8.41	106,000,000
1916.....	727,000	57,000	70,700	Jan.....	238,000	1.00	13.78	173,000,000
1917.....	727,000	56,800	66,500	Jan.....	210,000	.886	11.94	151,000,000
1918.....	578,000	70,600	77,200	Nov.....	205,000	.865	11.72	148,000,000
1919.....	553,000	60,000	75,400	Dec.....	172,000	.726	9.85	124,000,000
The period.	1,160,000	41,900	51,400	Jan., 1890.	210,000	.887	12.05	152,000,000

CLARK FORK BASIN.

CLARK FORK AT NEWPORT (64).

Vertical and inclined staff gages at Priest River, Idaho, Newport, Wash., or Metaline Falls, Wash. Results indicate water supply available at Albany Falls.

Drainage area, 24,200 square miles. Areas in United States measured on United States Geological Survey maps, scale 1:500,000; area of Flathead River in British Columbia measured on Department of Lands map, scale 1:1,125,000; area of Priest River in British Columbia measured on British Columbia sheet maps, Nelson sheet, scale 1:126,720.

Monthly discharge of Clark Fork at Newport.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1903.							
July.....	102,000	44,800	71,400	2.95	3.40	4,390,000	A.
August.....	44,200	19,000	28,600	1.18	1.36	1,760,000	A.
September.....	18,500	14,100	15,500	.640	.71	922,000	A.
1903-4.							
October.....	16,200	14,100	15,200	.628	.72	935,000	A.
November.....	17,100	14,900	15,700	.649	.72	934,000	A.
December.....	16,600	14,900	16,100	.665	.77	990,000	A.
January.....	14,500	11,700	13,000	.537	.62	799,000	A.
February.....	11,700	10,300	10,900	.450	.49	627,000	A.
March.....	14,900	10,700	13,300	.550	.63	818,000	A.
April.....	58,400	13,300	31,300	1.29	1.44	1,860,000	A.
May.....	87,500	60,400	73,200	3.02	3.48	4,500,000	A.
June.....	88,200	69,700	82,000	3.39	3.78	4,880,000	A.
July.....	68,300	32,000	50,000	2.07	2.39	3,070,000	A.
August.....	31,400	14,100	21,100	.872	1.01	1,300,000	A.
September.....	14,100	9,700	11,800	.488	.54	702,000	A.
The year.....	88,200	9,700	29,500	1.22	16.59	21,400,000	
1904-5.							
October.....	9,700	8,510	9,030	.373	.43	555,000	A.
November.....	9,100	7,940	8,420	.348	.39	501,000	A.
December.....	8,510	7,940	8,140	.336	.39	501,000	A.
January.....	8,510	4,260	7,640	.316	.36	470,000	A.
February.....	8,510	4,690	7,170	.296	.31	398,000	A.
March.....	11,700	8,220	9,980	.412	.48	614,000	A.
April.....	16,600	11,400	12,600	.521	.58	750,000	A.
May.....	29,700	16,100	21,700	.897	1.03	1,330,000	A.
June.....	50,800	30,200	44,500	1.84	2.05	2,650,000	A.
July.....	42,800	19,400	30,300	1.25	1.44	1,860,000	A.
August.....	19,400	10,300	13,900	.574	.66	855,000	A.
September.....	10,300	8,160	9,030	.373	.42	537,000	A.
The year.....	50,800	4,260	15,200	.628	8.54	11,000,000	
1905-6.							
October.....	10,100	8,390	9,500	.393	.45	584,000	A.
November.....	9,820	9,340	9,640	.398	.44	574,000	A.
December.....	9,340	7,940	8,710	.360	.42	536,000	B.
January.....	8,160	7,500	7,700	.318	.37	473,000	B.
February.....	10,100	7,720	8,420	.348	.36	468,000	B.
March.....	10,600	6,870	9,430	.390	.45	580,000	A.
April.....	28,200	10,600	17,500	.723	.81	1,040,000	A.
May.....	41,200	28,700	36,700	1.52	1.75	2,260,000	A.
June.....	43,800	36,900	42,200	1.74	1.94	2,510,000	A.
July.....	36,900	19,000	28,700	1.19	1.37	1,760,000	A.
August.....	18,600	11,800	13,900	.574	.66	855,000	A.
September.....	11,800	9,100	10,300	.426	.48	613,000	A.
The year.....	43,800	6,870	16,900	.698	9.50	12,300,000	
1906-7.							
October.....	9,100	8,620	8,810	.364	.42	542,000	A.
November.....	22,100	8,620	15,400	.636	.71	916,000	B.
December.....			18,900	.781	.90	1,160,000	C.
January.....			16,300	.674	.78	1,000,000	C.
February.....			14,500	.599	.62	805,000	C.
March.....	19,000	15,100	17,000	.702	.81	1,050,000	B.
April.....	39,000	18,600	28,400	1.17	1.30	1,690,000	B.
May.....	83,200	38,000	57,300	2.37	2.73	3,520,000	B.
June.....	95,200	83,200	90,200	3.73	4.16	5,370,000	B.
July.....	90,100	48,100	73,700	3.05	3.52	4,530,000	B.
August.....	54,700	31,600	45,200	1.87	2.16	2,780,000	B.
September.....	30,200	15,400	22,000	.909	1.01	1,310,000	B.
The year.....	95,200	8,620	34,100	1.41	19.12	24,700,000	

Monthly discharge of Clark Fork at Newport—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907-8.							
October.....			14,200	0.587	0.68	873,000	C.
November.....			12,800	.529	.59	762,000	C.
December.....			13,200	.545	.63	812,000	C.
January.....			10,800	.446	.51	664,000	C.
February.....			9,600	.397	.43	552,000	C.
March.....	13,900	9,340	11,500	.475	.55	707,000	B.
April.....	44,300	13,900	22,200	.917	1.02	1,320,000	B.
May.....	68,700	44,900	59,400	2.45	2.82	3,650,000	B.
June.....	124,000	69,200	103,000	4.26	4.75	6,130,000	B.
July.....	94,500	41,200	60,600	2.50	2.88	3,730,000	B.
August.....	40,200	16,500	25,800	1.07	1.23	1,590,000	B.
September.....	16,500	10,600	13,300	.550	.61	791,000	B.
The year.....	124,000		29,700	1.23	16.70	21,600,000	
1908-9.							
October.....	13,000	9,710	11,300	.467	.54	695,000	B.
November.....	13,000	11,600	12,400	.512	.57	738,000	B.
December.....	11,000	8,700	9,770	.404	.47	601,000	B.
January.....	15,400	5,760	9,580	.396	.46	589,000	B.
February.....	15,400	9,980	12,000	.496	.52	666,000	B.
March.....	13,700	11,300	12,000	.496	.57	738,000	B.
April.....	22,000	13,700	17,300	.715	.80	1,030,000	B.
May.....	53,400	21,000	32,300	1.33	1.53	1,990,000	B.
June.....	104,000	57,400	91,100	3.76	4.20	5,420,000	B.
July.....	97,100	42,300	67,000	2.77	3.19	4,120,000	B.
August.....	41,100	18,300	28,500	1.18	1.36	1,750,000	B.
September.....	17,900	12,000	14,200	.587	.65	845,000	B.
The year.....	104,000	5,760	26,500	1.10	14.86	19,200,000	
1909-10.							
October.....	12,000	10,300	11,200	.463	.53	689,000	B.
November.....	24,700	10,600	15,000	.620	.69	893,000	B.
December.....	26,600	17,900	22,800	.942	1.09	1,400,000	B.
January.....	20,600	13,500	17,500	.723	.83	1,080,000	B.
February.....	13,500	8,400	10,400	.430	.45	578,000	B.
March.....	41,100	12,400	27,400	1.13	1.30	1,680,000	B.
April.....	66,500	38,800	47,000	1.94	2.16	2,800,000	B.
May.....	75,500	68,700	72,600	3.00	3.46	4,460,000	B.
June.....	71,000	45,900	59,800	2.47	2.76	3,560,000	B.
July.....	44,700	20,600	31,500	1.30	1.50	1,940,000	B.
August.....	22,000	11,300	15,900	.657	.76	978,000	B.
September.....	11,000	10,000	10,400	.430	.48	619,000	B.
The year.....	75,500	8,400	23,600	1.18	16.01	20,700,000	
1910-11.							
October.....	12,000	9,110	10,600	.438	.50	652,000	B.
November.....	22,400	9,110	15,300	.632	.71	910,000	B.
December.....	21,200	15,700	18,900	.781	.90	1,160,000	B.
January.....	15,300	11,000	12,200	.501	.58	750,000	B.
February.....	11,700	9,340	10,400	.430	.45	578,000	B.
March.....	15,400	8,400	10,700	.442	.51	658,000	B.
April.....	29,000	16,200	20,200	.835	.93	1,200,000	B.
May.....	60,100	30,600	49,300	2.04	2.35	3,030,000	B.
June.....	77,400	54,700	68,900	2.85	3.18	4,100,000	B.
July.....	73,700	33,700	54,000	2.23	2.57	3,320,000	B.
August.....	32,600	15,800	23,700	.979	1.13	1,460,000	B.
September.....	16,100	12,300	14,000	.579	.65	833,000	B.
The year.....	77,400	8,400	25,800	1.07	14.46	18,700,000	
1911-12.							
October.....	12,400	9,340	10,000	.413	.48	615,000	B.
November.....	10,900	8,760	9,760	.403	.45	581,000	B.
December.....	12,000	6,700	10,000	.413	.48	615,000	B.
January.....			8,200	.339	.39	504,000	C.
February.....	11,300	10,000	10,500	.434	.47	604,000	B.
March.....	11,000	8,280	9,090	.376	.43	559,000	B.
April.....	32,200	10,000	21,500	.888	.99	1,280,000	B.
May.....	83,600	33,000	53,300	2.20	2.54	3,280,000	B.
June.....	89,000	71,700	84,100	3.48	3.88	5,000,000	B.
July.....	70,600	33,500	50,200	2.07	2.39	3,090,000	B.
August.....	33,000	18,200	24,700	1.02	1.18	1,520,000	B.
September.....	18,200	15,300	16,500	.682	.76	982,000	B.
The year.....	89,000		25,700	1.06	14.44	18,600,000	

Monthly discharge of Clark Fork at Newport—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1912-13.							
October.....	15,300	12,600	13,900	0.574	0.66	855,000	B.
November.....	17,700	13,000	15,800	.653	.73	940,000	B.
December.....	17,500	.....	15,500	.640	.74	953,000	B.
January.....	.....	.....	10,700	.442	.51	658,000	C.
February.....	13,600	7,430	10,800	.446	.46	600,000	B.
March.....	13,600	11,400	12,500	.517	.60	769,000	B.
April.....	45,500	13,200	25,900	1.07	1.19	1,540,000	A.
May.....	87,000	45,700	58,300	2.41	2.78	3,580,000	A.
June.....	136,000	91,700	122,000	5.04	5.62	7,260,000	A.
July.....	108,000	42,400	70,900	2.93	3.38	4,360,000	A.
August.....	41,600	20,900	29,000	1.20	1.38	1,780,000	A.
September.....	20,700	12,800	15,900	.657	.73	946,000	A.
The year.....	136,000	.....	33,500	1.38	18.78	24,200,000	
1913-14.							
October.....	12,600	11,400	11,800	.488	.56	726,000	A.
November.....	14,300	11,600	13,000	.537	.60	774,000	A.
December.....	14,300	9,390	11,800	.488	.56	726,000	A.
January.....	12,500	9,920	11,800	.488	.56	726,000	A.
February.....	11,600	7,600	10,200	.421	.44	566,000	A.
March.....	18,200	11,600	14,700	.607	.70	904,000	A.
April.....	38,800	18,400	27,000	1.12	1.25	1,610,000	A.
May.....	67,400	39,200	52,900	2.19	2.52	3,250,000	A.
June.....	67,300	53,000	62,100	2.57	2.87	3,700,000	A.
July.....	52,600	26,700	39,200	1.62	1.87	2,410,000	A.
August.....	26,200	12,500	18,000	.744	.86	1,110,000	A.
September.....	12,500	10,000	10,700	.442	.49	637,000	A.
The year.....	67,400	7,600	23,700	.979	13.28	17,100,000	
1914-15.							
October.....	18,000	10,400	12,200	.504	.58	750,000	A.
November.....	21,400	14,900	19,200	.793	.88	1,140,000	A.
December.....	20,900	12,200	16,000	.661	.76	984,000	A.
January.....	13,400	8,570	11,000	.455	.52	676,000	A.
February.....	9,950	9,080	9,410	.389	.41	523,000	A.
March.....	13,100	9,220	10,600	.438	.50	652,000	A.
April.....	29,900	13,400	19,800	.818	.91	1,180,000	A.
May.....	42,500	30,000	35,900	1.48	1.71	2,210,000	A.
June.....	42,500	40,300	41,900	1.73	1.93	2,490,000	A.
July.....	40,000	29,900	35,300	1.46	1.68	2,170,000	A.
August.....	29,500	16,400	22,900	.946	1.09	1,410,000	A.
September.....	15,900	11,900	13,100	.541	.60	780,000	A.
The year.....	42,500	8,570	20,700	.855	11.57	15,000,000	
1915-16.							
October.....	11,800	11,200	11,500	.475	.55	707,000	A.
November.....	12,200	10,900	11,500	.475	.53	684,000	A.
December.....	12,200	10,500	11,700	.483	.56	719,000	A.
January.....	9,730	6,760	8,290	.343	.40	510,000	A.
February.....	14,000	7,180	10,800	.446	.48	621,000	A.
March.....	36,500	13,600	22,100	.913	1.05	1,360,000	A.
April.....	47,600	36,500	41,400	1.71	1.91	2,460,000	A.
May.....	70,500	50,100	64,800	2.68	3.09	3,980,000	A.
June.....	119,000	65,500	86,000	3.55	3.96	5,120,000	A.
July.....	131,000	71,600	113,000	4.67	5.38	6,950,000	A.
August.....	70,300	29,000	45,000	1.86	2.14	2,770,000	A.
September.....	28,100	19,800	23,200	.959	1.07	1,380,000	A.
The year.....	131,000	6,760	37,500	1.55	21.12	27,300,000	
1916-17.							
October.....	19,800	13,600	16,500	.682	.79	1,010,000	A.
November.....	13,600	11,500	12,900	.533	.59	768,000	A.
December.....	12,300	5,730	10,500	.434	.50	646,000	A.
January.....	10,400	8,030	9,260	.383	.44	569,000	A.
February.....	9,940	8,010	9,380	.388	.40	521,000	A.
March.....	9,420	8,010	8,630	.357	.41	531,000	A.
April.....	27,700	9,570	17,800	.736	.82	1,060,000	A.
May.....	101,000	28,200	54,300	2.24	2.58	3,340,000	A.
June.....	119,000	104,000	112,000	4.63	5.17	6,660,000	A.
July.....	115,000	49,200	83,700	3.46	3.99	5,150,000	A.
August.....	47,200	18,400	29,700	1.23	1.42	1,830,000	A.
September.....	18,000	11,600	14,200	.587	.65	845,000	A.
The year.....	119,000	5,730	31,700	1.31	17.76	22,900,000	

Monthly discharge of Clark Fork at Newport—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1917-18.							
October.....	11,400	9,310	10,400	0.430	0.50	640,000	A.
November.....	9,630	8,690	9,140	.378	.42	544,000	A.
December.....	21,100	8,700	11,300	.467	.54	695,000	A.
January.....	38,100	24,300	31,000	1.28	1.48	1,910,000	A.
February.....	22,900	15,200	18,900	.781	.81	1,050,000	A.
March.....	20,600	14,600	16,000	.661	.76	984,000	A.
April.....	40,700	21,000	29,800	1.23	1.37	1,770,000	A.
May.....	74,800	41,400	63,900	2.64	3.04	3,930,000	A.
June.....	98,200	59,500	79,200	3.27	3.65	4,710,000	A.
July.....	87,600	29,500	52,500	2.17	2.50	3,230,000	A.
August.....	28,500	16,500	20,800	.860	.99	1,280,000	A.
September.....	16,500	10,800	12,900	.533	.59	768,000	A.
The year.....	98,200	8,690	29,700	1.23	16.65	21,500,000	
1918-19.							
October.....	10,600	9,560	10,100	.417	.48	621,000	A.
November.....	10,900	9,210	10,200	.421	.47	607,000	A.
December.....	10,200	8,700	9,550	.395	.46	587,000	A.
January.....	15,700	7,220	10,000	.413	.48	615,000	A.
February.....	15,000	11,400	12,900	.533	.56	716,000	A.
March.....	14,300	10,400	11,600	.479	.55	713,000	A.
April.....	34,000	14,700	23,000	.950	1.06	1,370,000	A.
May.....	68,900	36,500	48,800	2.02	2.33	3,000,000	A.
June.....	76,900	49,300	65,800	2.72	3.04	3,920,000	A.
July.....	47,900	18,600	31,100	1.29	1.49	1,910,000	A.
August.....	18,100	9,490	13,300	.550	.63	818,000	A.
September.....	9,480	6,870	7,990	.330	.37	475,000	A.
The year.....	76,900	6,870	21,200	.876	11.92	15,400,000	

Yearly discharge of Clark Fork at Newport.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1904.....	88,200	9,700	10,900	Feb.....	29,500	1.22	16.59	21,400,000
1905.....	50,800	4,260	7,170	Feb.....	15,200	.628	8.54	11,000,000
1906.....	43,800	6,870	7,700	Jan.....	16,900	.698	9.50	12,300,000
1907.....	95,200	8,620	8,810	Oct.....	34,100	1.41	19.12	24,700,000
1908.....	124,000	.....	9,600	Feb.....	29,700	1.23	16.70	21,600,000
1909.....	104,000	5,760	9,580	Jan.....	26,500	1.10	14.86	19,200,000
1910.....	75,500	8,400	10,400	Feb., Sept.	28,600	1.18	16.01	20,700,000
1911.....	77,400	8,400	10,400	Feb.....	25,800	1.07	14.46	18,700,000
1912.....	89,000	.....	8,200	Jan.....	25,700	1.06	14.44	18,600,000
1913.....	136,000	.....	10,700	Jan.....	33,500	1.38	18.78	24,200,000
1914.....	67,400	7,600	10,200	Feb.....	23,700	.979	13.28	17,100,000
1915.....	42,500	8,570	9,410	Feb.....	20,700	.855	11.57	15,000,000
1916.....	131,000	6,760	8,290	Jan.....	37,500	1.55	21.12	27,300,000
1917.....	119,000	5,730	8,630	Mar.....	31,700	1.31	17.76	22,900,000
1918.....	98,200	8,690	9,140	Nov.....	29,700	1.23	16.65	21,500,000
1919.....	76,900	6,870	7,990	Sept.....	21,200	.876	11.92	15,400,000
The period.	136,000	4,260	7,170	Sept., 1905.	26,900	11.1	15.08	19,500,000

NOTE.—Maximum discharge during period of record, 136,000 second-feet, June 16, 1913; minimum discharge, 4,260 second-feet Jan. 13, 1905. Maximum discharge during flood of June, 1894, 217,000 second-feet, determined from high-water marks and extension of rating curve.

Records previously published in Water-Supply Papers 135, 178, 252, 272, and 292 are superseded by revised records published in Water-Supply Paper 532.

CLARK FORK AT METALINE FALLS (65).

Staff gage above Metaline Falls and opposite town of Metaline Falls, 11 miles above international boundary, in Pend Oreille County (Pl. VI, A). Records indicate flow below Sullivan Creek, which enters just above the falls.

There are numerous small diversions above the station for irrigation.

Drainage area, 25,100 square miles (revised). Areas in United States measured on United States Geological Survey maps, scale 1:500,000; area of Flathead River in British Columbia measured on Department of Lands map, scale 1:1,125,000; area of Priest River in British Columbia measured on Nelson sheet of British Columbia map.

Monthly discharge of Clark Fork at Metaline Falls, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1912-13.							
October ^a	15,700	12,900	14,200	0.566	0.65	873,000	B.
November ^a	18,100	13,300	16,100	.641	.72	958,000	B.
December.....	17,900	.....	15,800	.629	.73	972,000	B.
January.....	.....	.....	11,000	.438	.50	676,000	C.
February.....	13,900	7,720	11,100	.442	.46	616,000	A.
March.....	13,900	11,700	12,800	.510	.59	787,000	A.
April.....	46,200	13,500	26,500	1.06	1.18	1,580,000	A.
May.....	90,000	46,400	59,900	2.39	2.76	3,680,000	A.
June.....	139,000	95,800	126,000	5.02	5.60	7,500,000	A.
July.....	109,000	42,900	71,600	2.85	3.29	4,400,000	A.
August.....	42,100	21,300	29,500	1.18	1.36	1,810,000	A.
September.....	21,100	13,200	16,300	.649	.72	970,000	A.
The year.....	139,000	.....	34,300	1.37	18.56	24,800,000	
1913-14.							
October.....	13,000	11,700	12,100	.482	.56	744,000	A.
November.....	14,600	11,900	13,300	.530	.59	791,000	A.
December.....	14,600	9,670	12,100	.482	.56	744,000	A.
January.....	12,800	10,200	12,100	.482	.56	744,000	A.
February.....	11,900	7,800	10,500	.418	.44	583,000	A.
March.....	18,400	11,900	15,000	.598	.69	922,000	A.
April.....	39,900	18,600	27,900	1.11	1.24	1,660,000	A.
May.....	69,800	40,400	55,600	2.22	2.56	3,420,000	A.
June.....	70,100	54,300	64,200	2.56	2.86	3,820,000	A.
July.....	54,000	27,000	39,900	1.59	1.83	2,450,000	A.
August.....	26,500	12,800	18,300	.729	.84	1,130,000	A.
September.....	12,800	10,400	11,100	.442	.49	660,000	A.
The year.....	70,100	7,800	24,400	.972	13.22	17,700,000	
1914-15.							
October.....	18,400	10,800	12,500	.498	.57	769,000	A.
November.....	21,800	15,400	19,700	.785	.88	1,170,000	A.
December.....	21,300	12,400	16,300	.649	.75	1,000,000	A.
January.....	13,700	8,760	11,300	.450	.52	695,000	A.
February.....	10,200	9,330	9,680	.386	.40	538,000	A.
March.....	13,500	9,500	10,900	.434	.50	670,000	A.
April.....	30,800	13,900	20,800	.829	.92	1,240,000	A.
May.....	44,000	31,300	37,200	1.48	1.71	2,290,000	A.
June.....	44,000	40,700	42,700	1.70	1.90	2,540,000	A.
July.....	40,400	30,300	35,700	1.42	1.64	2,200,000	A.
August.....	29,900	16,700	23,200	.924	1.07	1,430,000	A.
September.....	16,300	12,200	13,400	.534	.60	797,000	A.
The year.....	44,000	8,760	21,200	.845	11.46	15,300,000	

^a Revised since published originally in Water-Supply Paper 362, p. 59. These results are based upon discharge at Newport, Wash., allowance being made for inflow between Newport and Metaline Falls.

Monthly discharge of Clark Fork at Metaline Falls, for the year ending Sept. 30,
1913—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1915-16.							
October.....	12,100	11,600	11,800	0.470	0.54	726,000	A.
November.....	12,500	11,300	11,800	.470	.52	702,000	A.
December.....	12,500	10,800	12,000	.478	.55	738,000	A.
January.....	9,980	6,980	8,540	.340	.39	525,000	A.
February.....	14,300	7,400	11,100	.442	.48	638,000	A.
March.....	36,900	13,900	22,500	.896	1.03	1,380,000	A.
April.....	48,500	36,900	42,000	1.67	1.86	2,500,000	A.
May.....	72,100	51,000	66,200	2.64	3.04	4,070,000	A.
June.....	122,000	67,100	88,500	3.53	3.94	5,270,000	A.
July.....	133,000	72,100	114,000	4.54	5.23	7,010,000	A.
August.....	70,800	29,400	45,400	1.81	2.09	2,790,000	A.
September.....	28,400	20,200	23,600	.940	1.05	1,400,000	A.
The year.....	133,000	6,980	38,200	1.52	20.72	27,700,000	
1916-17.							
October.....	20,200	13,900	16,800	.669	.77	1,030,000	A.
November.....	13,900	11,800	13,200	.526	.59	786,000	A.
December.....	12,600	5,960	10,800	.430	.50	664,000	A.
January.....	10,600	8,240	9,490	.378	.44	584,000	A.
February.....	10,200	8,240	9,620	.383	.40	534,000	A.
March.....	9,650	8,240	8,870	.353	.41	545,000	A.
April.....	28,100	9,800	18,100	.721	.80	1,080,000	A.
May.....	103,000	28,600	55,700	2.22	2.56	3,420,000	A.
June.....	122,000	103,000	115,000	4.58	5.11	6,840,000	A.
July.....	117,000	49,900	84,900	3.38	3.90	5,220,000	A.
August.....	47,800	18,700	30,100	1.20	1.38	1,850,000	A.
September.....	18,300	11,900	14,500	.578	.64	863,000	A.
The year.....	122,000	5,960	32,400	1.29	17.50	23,400,000	
1917-18.							
October.....	11,700	9,650	10,700	.426	.49	658,000	A.
November.....	9,950	9,070	9,450	.376	.42	562,000	A.
December.....	21,500	9,070	11,600	.462	.53	713,000	A.
January.....	38,500	24,600	31,300	1.25	1.44	1,920,000	A.
February.....	23,200	15,500	19,200	.765	.80	1,070,000	A.
March.....	21,000	14,900	16,300	.649	.75	1,000,000	A.
April.....	41,200	21,400	30,300	1.21	1.35	1,800,000	A.
May.....	75,500	41,900	64,900	2.59	2.99	3,990,000	A.
June.....	99,100	60,400	80,300	3.20	3.57	4,780,000	A.
July.....	88,100	29,800	53,000	2.11	2.43	3,260,000	A.
August.....	28,800	16,800	21,100	.841	.97	1,300,000	A.
September.....	16,800	11,000	13,100	.522	.58	780,000	A.
The year.....	99,100	9,070	30,200	1.20	16.32	21,800,000	
1918-19.							
October.....	10,800	9,800	10,400	.414	.48	640,000	A.
November.....	11,100	9,500	10,400	.414	.46	619,000	A.
December.....	10,400	8,900	9,780	.390	.45	601,000	A.
January.....	16,000	7,460	10,300	.410	.47	633,000	A.
February.....	15,300	11,700	13,200	.526	.55	733,000	A.
March.....	14,500	10,600	11,800	.470	.54	726,000	A.
April.....	35,600	14,900	23,700	.944	1.05	1,410,000	A.
May.....	72,300	38,100	51,000	2.03	2.34	3,140,000	A.
June.....	79,100	50,400	67,700	2.70	3.01	4,030,000	A.
July.....	49,000	18,900	31,700	1.26	1.45	1,950,000	A.
August.....	18,400	9,800	13,600	.542	.62	836,000	A.
September.....	9,800	7,200	8,340	.332	.37	496,000	A.
The year.....	79,100	7,200	21,800	.869	11.79	15,800,000	

NOTE.—Maximum discharge during period of record, 139,000 second-feet June 16, 1913; minimum discharge, 5,960 second-feet Dec. 27, 1916.

Yearly discharge of Clark Fork at Metaline Falls.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1913.....	139,000	.....	11,000	Jan.....	34,300	1.37	18.56	24,800,000
1914.....	70,100	7,800	10,500	Feb.....	24,400	.972	13.22	17,700,000
1915.....	44,000	8,760	9,680	Feb.....	21,200	.845	11.46	15,300,000
1916.....	133,000	6,980	8,540	Jan.....	38,200	1.52	20.72	27,700,000
1917.....	122,000	5,960	8,870	Mar.....	32,400	1.29	17.50	23,400,000
1918.....	99,100	9,070	9,450	Nov.....	30,200	1.20	16.32	21,800,000
1919.....	79,100	7,200	8,340	Sept.....	21,800	.869	11.79	15,800,000
The period.	139,000	5,960	8,340	Sept., 1919.	28,900	1.15	15.65	20,900,000

SULLIVAN CREEK NEAR METALINE FALLS (66).

Staff gage one-eighth mile below Outlet Creek, half a mile below Sullivan Lake, and 4 miles east of Metaline Falls, in Pend Oreille County.

Water is diverted from Sullivan Creek for storage in Sullivan Lake about a mile above station, but entire run-off of drainage basin passes gage. Storage in Sullivan Lake is used by Lehigh Portland Cement Co. to increase low-water flow.

Monthly discharge of Sullivan Creek near Metaline Falls.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1912.					
May 16-31.....	685	495	592	18,800	C.
June.....	470	168	347	20,600	C.
July.....	260	85	160	9,840	C.
August.....	152	85	106	6,520	C.
September.....	122	96	103	6,130	C.
The period.....	.....			61,900	
1912-13.					
October.....	136	96	122	7,500	C.
November.....	136	96	122	7,260	C.
December.....	136	96	117	7,190	C.
January 1-14.....	108	85	100	2,780	C.
March.....	108	85	102	6,270	C.
April.....	325	85	190	11,300	C.
May.....	1,340	222	526	32,300	C.
June 1-10.....	1,650	1,180	1,430	28,400	C.
July 8-31.....	370	164	228	10,900	B.
August.....	182	106	155	9,530	B.
September.....	164	120	140	8,330	B.
1913-14.					
October.....	148	94	116	7,130	B.
November.....	120	83	97.3	5,790	B.
December.....	120	74	91.6	5,630	C.
January.....	182	82	107	6,580	B.
February.....	120	60	88.1	4,890	C.
March.....	120	74	91.2	5,610	C.
April.....	498	74	290	17,300	B.
May.....	1,340	395	903	55,500	B.
June.....	1,060	420	707	42,100	B.
July.....	470	106	222	13,600	B.
August.....	133	94	107	6,580	B.
September.....	182	83	118	7,020	B.
The year.....	1,340	60	246	178,000	

Monthly discharge of Sullivan Creek near Metaline Falls—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1914-15.					
October.....	164	94	116	7,130	B.
November.....	182	148	157	9,340	B.
December.....	148	74	92.9	5,710	B.
January.....	120	64	88.6	5,450	B.
February.....	120	74	90.1	5,000	B.
March.....	164	83	108	6,640	B.
April.....	635	164	346	20,600	B.
May.....	591	336	433	26,600	B.
June.....	508	145	272	16,200	A.
July.....	145	106	123	7,560	A.
August.....	118	85	98.4	6,050	A.
September.....	118	95	109	6,490	A.
The year.....	635	64	169	123,000	
1915-16.					
October.....	117	94	108	6,640	A.
November.....	30	84	105	6,250	A.
December.....	117	84	104	6,400	A.
January.....	194	75	83.2	5,120	A.
February.....	130	75	90.0	5,180	A.
March.....	176	84	126	7,750	A.
April.....	316	144	201	12,000	A.
May.....	668	316	469	28,800	B.
June.....	1,480	430	846	50,300	B.
July.....	940	180	425	26,100	A.
August.....	197	120	141	8,670	A.
September.....	133	108	118	7,020	A.
The year.....	1,480	75	235	170,000	
1916-17.					
October.....	120	97	102	6,270	A.
November.....	120	86	98.2	5,840	A.
December.....	97	77	87.0	5,350	A.
January.....	97	69	76.2	4,690	A.
February.....	97	77	81.2	4,510	A.
March.....	86	77	79.0	4,860	A.
April.....	120	77	104	6,190	A.
May.....	1,040	120	453	27,900	A.
June.....	1,400	574	896	53,300	B.
July.....	790	193	396	24,300	A.
August.....	200	88	125	7,690	A.
September.....	110	79	91.6	5,450	A.
The year.....	1,400	69	216	156,000	
1917-18.					
October.....	115	92	105	6,460	B.
November.....	126	97	104	6,190	C.
December.....	128	99	115	7,070	C.
January.....	133	88	111	6,820	C.
February.....	113	90	99.1	5,500	C.
March.....	136	83	105	6,460	C.
April.....	211	118	165	9,820	C.
May.....	524	173	327	20,100	B.
June.....	646	166	375	22,300	B.
July.....	180	99	151	9,280	B.
August.....	128	90	101	6,210	B.
September.....	90	74	79.1	4,710	B.
The year.....	646	74	153	111,000	
1918-19.					
October.....	103	77	84.6	5,200	D.
November.....	97	64	81.6	4,860	D.
December.....	99	67	78.1	4,800	D.
January.....	108	64	90.4	5,560	D.
February.....	106	84	91.4	5,080	D.
March.....	110	46	71.9	4,420	D.
April.....	526	74	221	13,200	D.
May.....	1,580	278	749	46,100	D.
June.....	1,030	361	642	38,200	B.
July.....	361	109	203	12,500	B.
August.....	155	96	111	6,820	B.
September.....	146	98	117	6,960	B.
The year.....	1,580	46	212	154,000	

NOTE.—Maximum discharge on record, 1,650 second-feet June 2, 1913; minimum discharge, 46 second-feet Mar. 25, 1919.

Yearly discharge of Sullivan Creek near Metaline Falls.

Year ending September 30.	Discharge in second-feet.					Run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1914.....	1,340	60	88.1	Feb.....	246	178,000
1915.....	635	64	88.6	Jan.....	169	123,000
1916.....	1,480	75	83.2	Jan.....	235	170,000
1917.....	1,400	69	76.2	Jan.....	216	156,000
1918.....	646	74	79.1	Sept.....	153	111,000
1919.....	1,580	46	71.9	Mar.....	212	154,000
The period.....	1,580	46	71.9	Mar., 1919.	205	149,000

KETTLE RIVER BASIN.

KETTLE RIVER AT BOYDS (67).

Staff gage opposite Great Northern Railway station at Boyds, 1¼ miles above Sherwood Creek, and 4 miles above mouth of river, in Ferry County.

Flow is slightly regulated by utilization of small amount of storage for meeting diurnal fluctuation of load at the power plant at Cascade, British Columbia.

Drainage area, 4,060 square miles; measured on United States Geological Survey and British Columbia Railway Belt maps, scale 1:500,000.

Monthly discharge of Kettle River at Boyds.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1913-14.							
October.....	1,560	785	954	0.235	0.27	58,700	A.
November.....	1,040	830	923	.227	.25	54,900	A.
December.....	935	548	692	.170	.20	42,500	B.
January.....	935	548	800	.197	.23	49,200	B.
February.....	865	490	640	.158	.16	35,500	B.
March.....	1,750	617	976	.240	.28	60,000	A.
April.....	13,200	1,560	7,010	1.73	1.93	417,000	A.
May.....	18,000	7,860	12,000	2.96	3.41	738,000	A.
June.....	16,800	4,760	8,360	2.06	2.30	497,000	A.
July.....	4,760	795	2,150	.530	.61	132,000	A.
August.....	795	288	512	.126	.15	31,500	A.
September.....	970	295	458	.113	.13	27,300	A.
The year.....	18,000	288	2,960	.729	9.92	2,140,000	
1914-15.							
October.....	1,560	671	987	.243	.28	60,700	A.
November.....	1,950	1,120	1,420	.350	.39	84,500	A.
December.....	1,120	590	847	.209	.24	52,100	B.
January.....			800	.197	.23	49,200	D.
February.....			930	.229	.24	51,600	D.
March.....	1,850	411	878	.216	.25	54,000	A.
April.....	11,000	1,950	6,410	1.58	1.76	381,000	A.
May.....	14,300	7,860	10,700	2.64	3.04	658,000	A.
June.....	12,800	3,760	6,590	1.62	1.81	392,000	A.
July.....	6,190	3,150	4,300	1.06	1.22	264,000	A.
August.....	3,450	910	1,780	.438	.50	109,000	A.
September.....	840	580	701	.173	.19	41,700	A.
The year.....	14,300		3,040	.749	10.15	2,200,000	

NOTE.—Mean discharge for October, 1915, 636 second-feet; run-off, 39,100 acre-feet. Maximum discharge during period of record, 18,000 second-feet May 17, 1914; minimum discharge, 288 second-feet Aug. 30, 1914.

CURLEW CREEK NEAR CURLEW (68).

Staff gage 400 feet below mouth of Lambert Creek, half a mile below outlet of Curlew Lake, and 9 miles above Curlew, in Ferry County.

Flow regulated by natural storage in Curlew Lake.

Drainage area, 93 square miles, measured on topographic and Colville National Forest maps; uncertain because divide between Curlew Creek and Sanpoil River can not be determined accurately.

Monthly discharge of Curlew Creek near Curlew.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1917.					
May 4-31.....	65	11.6	37.0	2,050	A.
June.....	65	26	46.4	2,760	A.
July.....	24	3.9	11.7	719	A.
August.....	3.7	1.6	2.60	160	A.
September.....	2.4	1.4	1.69	101	A.
The period.....				5,790	
1917-18.					
October.....	1.5	1.1	1.31	80.6	A.
November.....	2.0	1.5	1.69	101	A.
December.....	5.5	1.8	3.47	213	A.
January.....	5.9	3.9	5.23	322	A.
February.....	5.7	3.9	4.91	273	A.
March.....	8.8	4.1	5.88	362	A.
April.....	11.2	7.5	9.51	566	A.
May.....	11.2	8.4	9.85	606	A.
June.....	10.9	3.4	6.03	359	A.
July.....	3.4	1.6	2.44	150	A.
August.....	2.3	1.2	1.68	103	A.
September.....	1.1	.7	.89	53	A.
The year.....	11.2	.7	4.40	3,190	
1918-19.					
October.....	1.6	.9	1.05	64.6	A.
November.....	2.0	1.1	1.50	89.3	A.
December.....	2.1	.....	1.40	86.1	B.
January.....	5.7	.....	1.98	122	B.
February.....	6.2	3.9	5.10	283	A.
March.....	15.7	4.0	8.26	508	A.
April.....	39	15.7	26.0	1,550	B.
May.....	50	39	44.0	2,710	B.
June.....	42	7.1	20.5	1,220	A.
July.....	7.6	2.6	4.62	284	A.
August.....	2.8	1.0	1.84	113	A.
September.....	1.8	.9	1.25	74.4	A.
The year.....	50	.....	9.80	7,100	

NOTE.—Maximum discharge during period of record, 65 second-feet May 30, June 2 and 6, 1917; minimum discharge estimated at 0.5 second-foot Dec. 31, 1918, to Jan. 5, 1919, when stage-discharge relation was affected by ice.

HALL CREEK BASIN.

HALL CREEK AT INCHELIUM (69).

Half a mile above highway bridge, three-fourths mile above mouth of creek and three-fourths mile northwest of Inchelium, in Ferry County, except from May 16, 1913, to July 31, 1915, when station was at Wire's Bridge, 3 miles above mouth. Staff gages used prior to August 27, 1916; water-stage recorder used thereafter.

Water is diverted for use in power plant at Gwen mine but is returned to creek above gage. Effect of operation of power plant is negligible.

Drainage area, at upper site, 160 square miles; at lower site, 163 square miles; measured on topographic, Colville Indian Reservation, and Colville National Forest maps.

Monthly discharge of Hall Creek at Inchelium.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1912-13.					
December 18-31.....	38	34	35.9	997	B.
January.....	35	27	32.1	1,970	B.
February.....	35	25	31.2	1,730	C.
March.....	39	31	33.8	2,080	B.
April.....	442	39	231	13,700	B.
May.....	366	196	256	15,700	B.
June.....	219	112	143	8,510	B.
July.....	133	54	83.5	5,130	B.
August.....	53	28	37.9	2,330	B.
September.....	40	27	30.9	1,840	B.
The period.....				54,000	
1913-14.					
October.....	40	24	32.1	1,970	A.
November.....	62	32	45.1	2,680	A.
December.....	53	28	39.3	2,420	A.
January.....	186	36	89.4	5,500	B.
February.....	66	25	45.5	2,530	C.
March.....	236	69	136	8,360	A.
April.....	920	152	507	30,200	B.
May.....	576	163	350	21,500	B.
June.....	166	68	113	6,720	B.
July.....	68	28	44.4	2,730	B.
August.....	27	20	22.3	1,370	B.
September.....	40	18	26.1	1,550	B.
The year.....	920	18	121	87,500	
1914-15.					
October.....			36.0	2,210	D.
November.....			38.6	2,300	D.
December.....	43		27.6	1,700	C.
January.....	34		29.3	1,800	C.
February.....	31	26	28.8	1,600	B.
March.....	196	34	81.1	4,990	B.
April.....	381	189	292	17,400	B.
May.....	519	126	282	17,300	B.
June.....	330	80	162	9,640	B.
July.....	76	39	57.7	3,550	B.
August.....		24	29.6	1,820	C.
September.....	23	19	20.5	1,220	C.
The year.....	519		90.5	65,500	
1915-16.					
October.....	21	20	20.1	1,240	B.
November.....	22	17	20.2	1,200	B.
December.....	23	15	19.2	1,180	B.
January.....	20		16.1	990	C.
February.....	30	16	21.4	1,230	A.
March.....	164	30	76.8	4,720	A.
April.....	559	142	359	21,400	A.
May.....	649	284	406	25,000	A.
June.....	324	188	245	14,600	A.
July.....	176	62	112	6,890	A.
August.....	66	33	47.5	2,920	A.
September.....	35	26	29.9	1,780	A.
The year.....	649		114	83,200	
1916-17.					
October.....	30	24	25.4	1,560	A.
November.....	51		26.9	1,600	B.
December.....			22.8	1,400	C.
January.....			19.7	1,210	C.
February.....	25		21.1	1,170	B.
March.....	27		22.1	1,360	A.
April.....	212	24	101	6,010	A.
May.....	604	185	400	24,600	A.
June.....	384	113	199	11,800	A.
July.....	104	37	56.2	3,460	A.
August.....	35	18	22.8	1,400	A.
September.....	22	17	19.1	1,140	....
The year.....	604		78.3	56,700	

Monthly discharge of Hall Creek at Inchelium—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1917-18.					
October.....	21	16	17.1	1,050	A.
November.....	31	19	20.6	1,230	A.
December.....			20.3	1,250	B.
January.....			19.6	1,210	B.
February.....			14.6	811	B.
March.....	102	17	38.1	2,340	A.
April.....	160	79	114	6,780	A.
May.....	106	51	83.0	5,100	A.
June.....	52	18	34.3	2,040	A.
July.....	21	11	15.7	965	A.
August.....	17	11	13.3	818	B.
September.....	12	8	9.60	571	B.
The year.....	160		33.4	24,200	
1918-19.					
October.....	20	10	13.7	842	B.
November.....			20.5	1,220	C.
December.....	20		12.4	762	C.
January.....	134		33.7	2,070	C.
February.....	60		49.4	2,740	B.
March.....	230	43	73.5	4,520	A.
April.....	706	272	450	26,800	B.
May.....	658	254	382	23,500	B.
June.....	234	64	123	7,320	A.
July.....	62	26	38.7	2,380	A.
August.....	35	17	22.0	1,350	A.
September.....	27	16	18.5	1,100	A.
The year.....	706		103	74,600	

NOTE.—Maximum discharge during period of record, 965 second-feet at 6.20 a. m. Apr. 16, 1914; minimum discharge estimated at 4 second-feet Jan. 1, 1919, when stage-discharge relation was affected by ice.

Yearly discharge of Hall Creek at Inchelium.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1914.....	920	18	22.3	Aug.....	121	87,500
1915.....	519		20.5	Sept.....	90.5	65,500
1916.....	649		16.1	Jan.....	114	83,200
1917.....	604		19.1	Sept.....	78.3	56,700
1918.....	160		9.6	Sept.....	33.4	24,200
1919.....	706		12.4	Dec.....	103	74,600
The period.....	920		9.6	Sept.. 1918.	90.0	65,300

STRANGER CREEK BASIN.

STRANGER CREEK AT METEOR (70).

Staff gage at highway bridge at Meteor, 8 miles southwest of Inchelium, in Ferry County.

Drainage area, 54 square miles; measured on map of Colville Indian Reservation.

Monthly discharge of Stranger Creek at Meteor.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1916.					
August 29-31.....	9.9	9.9	9.90	58.9	A.
September.....	9.9	5.6	7.27	433	A.
1916-17.					
October.....	5.6	4.4	4.67	287	A.
November.....	9.9		5.47	325	B.
December.....	8.4		6.30	387	B.
January.....	8.0		5.86	360	B.
February.....			5.55	308	B.
March.....	9.5		7.41	456	B.
April.....	72	9.1	29.7	1,770	A.
May.....	164	77	122	7,500	A.
June.....	112	26	56.1	3,340	A.
July.....	25	8.7	15.4	947	A.
August.....	8.7	3.7	5.79	356	A.
September.....	3.7	3.0	3.27	195	A.
The year.....	164	3.0	22.4	16,200	
1917-18.					
October.....	2.8	2.3	2.48	152	A.
November.....	3.3	2.3	2.90	173	A.
December.....	6.2	3.0	4.71	290	A.
January.....	6.2		5.81	357	B.
February.....	6.2		5.31	295	B.
March.....	12.4	5.6	7.53	463	A.
April.....	25	12.4	19.6	1,170	A.
May.....	25	13.3	19.1	1,170	A.
June.....	12.9	6.2	9.22	549	A.
July.....	5.6	2.8	3.92	241	A.
August.....	3.0	1.0	1.87	115	A.
September.....	1.0	.6	.78	46.4	A.
The year.....	25	.6	6.94	5,020	
1918-19.					
October.....	1.4	.8	1.03	63.3	A.
November.....	6.2	1.0	2.74	163	A.
December.....	5.3		3.38	208	B.
January.....			4.03	248	C.
February.....	19.5		11.1	616	B.
March.....	40	13.3	18.6	1,140	A.
April.....	164	49	147	8,750	A.
May.....	164	48	92.5	5,690	A.
June.....	45	14.7	25.4	1,510	A.
July.....	14.2	5.9	9.42	579	A.
August.....	6.2	2.3	3.91	240	A.
September.....	2.8	2.0	2.36	140	A.
The year.....	164		26.7	19,300	

NOTE.—Maximum discharge during period of record, 164 second-feet May 15-18, 1917, Apr. 7-11, and Apr. 20 to May 3, 1919; minimum discharge estimated at 0.5 second-foot Jan. 1, 1919, when stage-discharge relation was affected by ice.

STRANGER CREEK AT INCHELIUM (71).

Staff gage half a mile above mouth of creek and half a mile south of Inchelium, in Ferry County.

There are several small diversions above the station for irrigation.

Drainage area, 74 square miles; measured on Colville Indian Reservation map, edition of 1913.

Monthly discharge of Stranger Creek at Inchelium.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy
	Maximum.	Minimum.	Mean.		
1914.					
March 18-31.....	80	31	57.3	1,590	A.
April.....	209	80	145	8,630	A.
May.....	122	47	81.2	4,990	B.
June.....	47	22	33.2	1,980	B.
July.....	22	11	14.9	916	B.
August.....	10.3	4.6	6.98	429	B.
September.....	8.3	4.6	5.96	355	B.
The period.....				18,900	
1914-15.					
October.....	14	5.5	8.43	518	B.
November.....	12	7.2	9.18	546	B.
December.....	9.3	.....	5.11	314	C.
January.....	6.9	.....	5.85	360	C.
February.....	9.3	3.9	6.29	349	C.
March.....	30	9	16.5	1,010	D.
April.....	86	32	58.1	3,460	C.
May.....	42	26	34.1	2,100	B.
June.....	40	18	28.2	1,680	B.
July.....	18	11	14.7	904	B.
August.....	11	6.4	8.41	517	B.
September.....	6.2	4.7	4.92	293	B.
The year.....	86	.....	16.6	12,100	
1915-16.					
October.....	6.0	5.1	5.34	328	B.
November.....	7.5	4.9	5.71	340	B.
December.....	10	.....	8.16	502	B.
January.....	.....	.....	9.12	561	B.
February.....	14	.....	10.8	621	A.
March.....	44	14	29.5	1,810	A.
April.....	181	56	129	7,680	A.
May.....	195	73	125	7,690	A.
June.....	78	38	51.1	3,040	A.
July.....	40	17	29.3	1,800	A.
August.....	20	12	14.6	898	A.
September.....	12	7.5	9.45	562	A.
The year.....	195	.....	35.6	25,800	
1916-17.					
October.....	7.0	6.1	6.65	409	A.
November.....	14	6.1	7.07	421	A.
December.....	11	7.0	8.71	536	A.
January.....	12	.....	8.28	509	B.
February.....	14	8.5	11.3	628	A.
March.....	26	8.0	13.7	842	A.
April.....	63	21	39.9	2,370	A.
May.....	142	68	106	6,520	A.
June.....	100	24	54.9	3,270	A.
The period.....				15,500	

NOTE.—Maximum discharge during period of record, 209 second-feet Apr. 18, 1914; minimum discharge estimated at 3.2 second-feet in December, 1914, when stage-discharge relation was affected by ice.

SPOKANE RIVER BASIN.

SPOKANE RIVER AT POST FALLS, IDAHO (72).

Staff gage (Pl. VI, B) a quarter of a mile below power plant of Washington Water Power Co., three-fourths mile below intake of Spokane Valley Land & Water Co.'s canal, and 1 mile west of Post Falls, in Kootenai County.

Flow regulated by storage and release of water in Coeur d'Alene Lake. Spokane Valley Land & Water Co.'s canal diverts water above gage. Total monthly discharge is computed from determinations of combined flow of river and canal.

Drainage area, 3,880 square miles (revised); measured by engineers of Washington Water Power Co. on maps of Spokane drainage basin, scale half an inch to the mile, compiled from best sources available.

Monthly discharge of Spokane River at Post Falls, Idaho.

[Includes discharge of Spokane Valley Land & Water Co. canal.]

Month.	Discharge in second-feet.					Run-off.		Accu- racy.	
	River.			Canal (mean).	Total (mean).	Per square mile.	Inches.		Acre-feet.
	Maxi- mum.	Mini- mum.	Mean.						
1912-13.									
October.....				45	2,020			124,000	C.
November.....				44	4,030			240,000	C.
December.....				42	3,510			216,000	C.
January.....	4,880	2,520	3,920	38	3,960			243,000	B.
February.....	5,090	2,760	3,710	41	3,750			208,000	B.
March.....	7,880	4,290	5,650	47	5,700			350,000	B.
April.....	28,700	8,160	19,600	60	19,700			1,170,000	B.
May.....	31,500	19,900	25,600	70	25,700			1,580,000	B.
June.....	31,500	10,400	20,800	70	20,900			1,240,000	B.
July.....	10,400	1,470	4,540	70	4,610			283,000	B.
August.....	1,560	1,380	1,480	70	1,550			95,300	B.
September.....	1,770	1,300	1,410	66	1,480			87,800	B.
The year.....	31,500	1,300	.....	55	8,060	2.08	28.24	5,840,000	
1913-14.									
October.....	4,900	1,380	2,320	60.9	2,380			146,000	B.
November.....	5,290	1,560	3,590	50.0	3,640			217,000	B.
December.....	4,170	1,300	2,270	52.1	2,320			143,000	B.
January.....	7,490	1,560	2,700	57.0	2,760			170,000	B.
February.....	6,780	3,200	5,310	58.1	5,370			298,000	B.
March.....	13,500	6,780	10,000	62.4	10,100			621,000	B.
April.....	20,600	2,240	16,300	72.4	16,400			976,000	B.
May.....	17,600	8,760	15,200	77.0	15,300			941,000	B.
June.....	7,740	1,470	4,520	77.0	4,600			274,000	B.
July.....	2,240	1,220	1,510	77.0	1,590			97,800	B.
August.....	1,560	1,080	1,390	77.0	1,470			90,400	B.
September.....	1,660	884	1,200	77.0	1,280			76,200	B.
The year.....	20,600	884	5,520	66.5	5,590	1.44	19.55	4,050,000	
1914-15.									
October.....	1,660	875	1,220	44.8	1,260			77,500	B.
November.....	5,090	920	4,130	38.1	4,170			248,000	B.
December.....	4,710	1,300	3,130	35.0	3,160			194,000	B.
January.....	2,770	1,150	1,750	33.8	1,780			109,000	B.
February.....	1,770	970	1,310	31.4	1,340			74,400	B.
March.....	10,100	1,150	5,470	37.9	5,510			339,000	A.
April.....	11,900	8,240	10,900	56.3	11,000			655,000	A.
May.....	11,300	1,770	6,670	72.9	6,740			414,000	A.
June.....	9,290	1,880	4,320	88.0	4,410			262,000	B.
July.....	2,770	1,380	2,050	88.0	2,140			132,000	B.
August.....	1,770	1,380	1,560	90.7	1,650			101,000	B.
September.....	1,560	1,380	1,490	90.4	1,580			94,000	B.
The year.....	11,900	875	3,670	59.1	3,730	.961	13.04	2,700,000	
1915-16.									
October.....	1,560	1,220	1,440	37	1,480			91,000	B.
November.....	2,370	1,380	1,520	47	1,570			93,400	B.
December.....	3,050	2,000	2,180	42	2,220			136,000	B.
January.....	4,710	2,120	2,570	24	2,590			159,000	B.
February.....	7,490	2,770	5,030	28	5,060			291,000	A.
March.....	25,200	5,900	14,300	58	14,400			885,000	A.
April.....	23,600	19,500	21,400	72	21,500			1,280,000	A.
May.....	27,900	18,000	22,300	93	22,400			1,380,000	A.
June.....	19,800	16,900	18,300	101	18,400			1,090,000	B.
July.....	16,600	2,370	10,700	96	10,800			664,000	B.
August.....	2,240	1,560	1,680	106	1,790			110,000	B.
September.....	1,560	1,470	1,530	79	1,610			95,800	B.
The year.....	27,900	1,220	8,580	65	8,640	2.23	30.35	6,280,000	

Monthly discharge of Spokane River at Post Falls, Idaho—Continued.

Month.	Discharge in second-feet.						Run-off.		Accu- racy.
	River.			Canal (mean).	Total (mean).	Per square mile.	Inches.	Acre-feet.	
	Maxi- mum.	Mini- mum.	Mean.						
1916-17.									
October.....	1,620	1,440	1,490	58.5	1,550	.....	.....	95,300	B.
November.....	2,160	1,420	1,730	39.5	1,770	.....	.....	105,000	B.
December.....	1,920	1,690	1,800	28.0	1,830	.....	.....	113,000	B.
January.....	1,880	1,770	1,860	.0	1,860	.....	.....	114,000	B.
February.....	3,400	1,770	2,680	40.3	2,720	.....	.....	151,000	B.
March.....	3,710	2,040	2,650	38.4	2,690	.....	.....	165,000	B.
April.....	25,200	3,080	14,100	39.6	14,100	.....	.....	839,000	A.
May.....	39,900	23,300	31,800	82.9	31,900	.....	.....	1,960,000	A.
June.....	37,100	16,400	25,600	103	25,700	.....	.....	1,530,000	A.
July.....	15,800	2,390	5,890	116	6,010	.....	.....	370,000	B.
August.....	2,500	2,010	2,130	97.2	2,230	.....	.....	137,000	B.
September.....	2,120	1,760	1,840	61.5	1,900	.....	.....	113,000	B.
The year.....	39,900	1,420	7,800	58.9	7,860	2.03	27.56	5,690,000	
1917-18.									
October.....	1,980	1,420	1,610	50	1,660	.....	.....	102,000	B.
November.....	1,730	960	1,330	40	1,370	.....	.....	81,500	B.
December.....	29,200	960	6,340	40	6,380	.....	.....	392,000	B.
January.....	39,200	10,400	23,500	30	23,500	.....	.....	1,440,000	B.
February.....	10,700	6,210	8,850	40	8,890	.....	.....	494,000	B.
March.....	15,100	5,070	7,570	50	7,620	.....	.....	496,000	B.
April.....	19,400	14,700	17,200	60	17,300	.....	.....	1,030,000	B.
May.....	19,400	11,300	15,800	90	15,900	.....	.....	978,000	B.
June.....	11,000	1,620	7,350	110	7,460	.....	.....	444,000	B.
July.....	2,390	1,090	1,590	120	1,710	.....	.....	105,000	B.
August.....	1,420	1,090	1,210	110	1,320	.....	.....	81,200	B.
September.....	1,520	1,090	1,240	70	1,310	.....	.....	78,000	B.
The year.....	39,200	960	7,810	67.7	7,880	2.03	27.56	5,690,000	
1918-19.									
October.....	1,850	1,160	1,280	50	1,330	.....	.....	81,800	B.
November.....	2,110	1,240	1,760	40	1,800	.....	.....	107,000	B.
December.....	7,050	1,850	3,600	40	3,640	.....	.....	224,000	B.
January.....	14,400	1,420	5,170	30	5,200	.....	.....	320,000	B.
February.....	11,600	2,110	5,840	40	5,880	.....	.....	327,000	B.
March.....	13,800	5,070	7,990	50	8,040	.....	.....	494,000	A.
April.....	24,500	14,400	19,800	60	19,900	.....	.....	1,180,000	A.
May.....	25,800	16,100	19,200	90	19,300	.....	.....	1,190,000	A.
June.....	16,100	2,390	7,580	120	7,700	.....	.....	458,000	B.
July.....	3,120	1,330	1,700	130	1,830	.....	.....	113,000	B.
August.....	1,520	1,020	1,180	120	1,300	.....	.....	79,900	B.
September.....	1,330	1,020	1,130	75.9	1,210	.....	.....	72,000	B.
The year.....	25,800	1,020	6,340	70.7	6,410	1.65	22.40	4,650,000	

NOTE.—Maximum discharge, including canal, during period of record, 39,900 second-feet May 18, 1917; minimum discharge, including canal, 918 second-feet Oct. 25, 1914. Monthly discharge from October to December, 1912, estimated by comparison with record of Spokane River at Spokane.

Yearly discharge of Spokane River at Post Falls, Idaho.

[Includes discharge of Spokane Valley Land & Water Co. canal.]

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maxi- mum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1913.....	31,500	1,360	1,480	Sept.....	8,060	2.08	28.24	5,840,000
1914.....	20,600	884	1,280	Sept.....	5,590	1.44	19.55	4,050,000
1915.....	11,900	875	1,260	Oct.....	3,730	.961	13.04	2,700,000
1916.....	27,900	1,280	1,480	Oct.....	8,640	2.23	30.35	6,280,000
1917.....	39,900	1,420	1,550	Oct.....	7,860	2.03	27.56	5,690,000
1918.....	39,200	960	1,310	Sept.....	7,880	2.03	27.56	5,690,000
1919.....	25,800	1,020	1,210	Sept.....	6,410	1.65	22.40	4,650,000
The period.	39,900	875	1,210	Sept., 1919	6,880	1.77	24.10	4,990,000

SPOKANE RIVER AT TRENT (73).

Water-stage recorder 1,500 feet above Northern Pacific Railway bridge and half a mile southeast of post office at Trent, in Spokane County.

Flow is partly regulated at Coeur d'Alene Lake.

Drainage area, 4,320 square miles; measured by engineers of Washington Water Power Co. on maps of Spokane drainage basin, scale half an inch to the mile, compiled from best sources available.

Spokane River at Trent.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911-12.							
October.....			1,530			94,100	C.
November.....	3,640	1,430	2,280			136,000	B.
December.....	3,310	1,690	2,240			138,000	B.
January.....	5,570	1,690	2,270			140,000	B.
February.....	8,700	4,500	6,920			398,000	B.
March.....	6,280	3,420	4,410			271,000	B.
April.....	17,200	6,730	14,000			833,000	B.
May.....	22,400	15,600	19,300			1,190,000	B.
June.....	20,900	3,760	13,000			774,000	B.
July.....	5,430	1,430	2,680			165,000	B.
August.....	2,780	1,310	1,580			97,200	B.
September.....	4,500	1,970	2,820			168,000	B.
The year.....	22,400	1,310	6,070	1.41	19.19	4,400,000	
1912-13.							
October.....	2,680	1,550	2,090			129,000	B.
November.....	6,130	2,050	4,290			255,000	B.
December.....	4,630	2,780	3,480			214,000	B.
January.....	5,150	2,780	4,050			249,000	B.
February.....	5,150	2,980	3,950			219,000	B.
March.....	5,710	4,500	4,960			148,000	B.
The period.....						1,210,000	

NOTE.—Discharge Oct. 1-13, 1911, computed by comparison with Spokane River at Spokane.

SPOKANE RIVER AT SPOKANE (74).

Located at various points in city of Spokane, above Spokane Falls.

Water stage recorder installed July 31, 1915; staff or wire gages used prior to that date.

A small percentage of the summer yield is utilized above the station for irrigation. Flow partly regulated at Coeur d'Alene Lake after July, 1906.

Drainage area 4,350 square miles (revised; measured by engineers of Washington Water Power Co. on maps of Spokane drainage basin, scale half an inch to the mile, compiled from best sources available).

Monthly discharge of Spokane River at Spokane.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-fcet.	
1891.							
April.....	11,700	2,740	6,700	1.54	1.72	399,000	B.
May.....	12,300	8,460	11,100	2.55	2.94	682,000	B.
June.....	8,720	3,960	5,640	1.30	1.45	336,000	C.
July.....	3,960	1,860	3,010	.692	.80	185,000	C.
August.....	1,860	.....	1,660	.382	.44	102,000	D.
September.....	.....	.....	1,560	.359	.40	92,800	D.
The period.....	.....	.....	.....	.....	.....	1,800,000	.....
1891-92.							
October.....	.....	.....	1,510	.347	.40	92,800	D.
November.....	3,070	1,500	2,680	.616	.69	159,000	D.
December.....	3,600	3,070	3,530	.811	.94	217,000	C.
January.....	3,600	2,740	2,980	.685	.79	183,000	C.
February.....	4,340	2,900	3,160	.726	.78	182,000	C.
March.....	11,200	4,540	8,480	1.95	2.25	521,000	B.
April.....	10,600	8,460	9,210	2.12	2.36	548,000	B.
May.....	21,800	10,300	15,000	3.45	3.98	922,000	B.
June.....	21,800	10,300	15,900	3.66	4.08	946,000	B.
July.....	9,760	3,600	6,540	1.50	1.73	402,000	C.
August.....	.....	.....	2,940	.676	.78	181,000	D.
September.....	.....	1,300	1,600	.368	.41	95,200	D.
The year.....	21,800	1,300	6,140	1.41	19.19	4,450,000	.....
1892-93.							
October.....	1,300	1,300	1,300	.299	.34	79,900	D.
November.....	2,430	1,300	1,580	.363	.40	94,000	D.
December.....	2,900	2,280	2,690	.618	.71	165,000	C.
January.....	3,600	2,430	3,060	.703	.81	188,000	C.
February.....	2,430	1,990	2,090	.480	.50	116,000	C.
March.....	4,740	1,990	2,400	.552	.64	148,000	C.
April.....	15,500	5,360	11,000	2.53	2.82	655,000	B.
May.....	37,500	16,100	25,100	5.77	6.65	1,540,000	B.
June.....	23,400	13,200	19,400	4.46	4.98	1,150,000	B.
July.....	12,900	4,540	8,380	1.93	2.22	515,000	B.
August.....	4,340	1,860	3,140	.722	.83	193,000	C.
September.....	1,860	1,400	1,530	.352	.39	91,000	C.
The year.....	37,500	1,300	6,820	1.57	21.29	4,930,000	.....
1893-94.							
October.....	4,740	1,500	3,810	.876	1.01	234,000	C.
November.....	8,460	3,960	5,950	1.37	1.53	354,000	C.
December.....	8,980	3,960	6,250	1.44	1.66	384,000	C.
January.....	10,600	3,780	6,640	1.53	1.76	408,000	C.
February.....	5,800	2,280	3,430	.789	.82	190,000	C.
March.....	6,520	2,280	3,230	.743	.86	199,000	C.
April.....	22,200	7,720	14,800	3.40	3.79	881,000	B.
May.....	49,000	22,200	28,900	6.64	7.66	1,780,000	B.
June.....	47,600	16,400	29,900	6.87	7.66	1,780,000	B.
July.....	16,100	6,760	10,400	2.39	2.76	640,000	B.
August.....	6,520	2,740	4,360	1.00	1.15	268,000	C.
September.....	2,740	2,280	2,380	.547	.61	142,000	C.
The year.....	49,000	1,500	10,000	2.30	31.27	7,260,000	.....
1894-95.							
October.....	3,070	2,130	2,350	.540	.62	144,000	C.
November.....	5,140	3,240	4,370	1.00	1.12	260,000	C.
December.....	5,580	3,420	4,670	1.07	1.23	287,000	C.
January.....	7,480	2,900	5,090	1.17	1.35	313,000	C.
February.....	8,200	3,420	4,520	1.04	1.08	251,000	C.
March.....	9,240	5,800	7,350	1.69	1.95	452,000	B.
April.....	14,800	7,000	10,100	2.32	2.59	601,000	B.
May.....	17,100	11,700	14,400	3.31	3.82	885,000	B.
June.....	11,700	5,360	8,120	1.87	2.09	483,000	B.
July.....	4,940	2,280	3,390	.779	.90	208,000	C.
August.....	2,280	1,500	1,790	.411	.47	110,000	C.
September.....	1,500	1,300	1,350	.310	.35	80,300	D.
The year.....	17,100	1,300	5,630	1.29	17.57	4,070,000	.....

NOTE.—These results supersede those published in Water Supply Paper 272, pp. 130-131. Discharge Aug. 14 to Oct. 19, 1891, and Aug. 3 to Sept. 19, 1892, interpolated.

Monthly discharge of Spokane River at Spokane—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1895-96.							
October.....	1,300	1,300	1,300	0.299	0.34	79,900	D.
November.....	1,610	1,300	1,470	.338	.38	87,500	C.
December.....	2,280	1,860	2,050	.471	.54	126,000	C.
January.....	6,520	2,280	3,800	.874	1.01	234,000	B.
February.....	12,600	6,520	7,070	1.63	1.76	407,000	B.
March.....	17,100	10,900	12,700	2.92	3.37	731,000	B.
April.....	17,100	13,900	15,400	3.54	3.95	916,000	B.
May.....	18,800	15,800	17,000	3.91	4.51	1,050,000	B.
June.....	21,400	18,800	20,300	4.67	5.21	1,210,000	B.
July.....	18,100	4,940	9,960	2.29	2.64	612,000	B.
August.....	4,740	2,430	3,490	.802	.92	215,000	C.
September.....	2,280	1,730	2,030	.467	.52	121,000	C.
The year.....	21,400	1,300	8,030	1.85	25.15	5,840,000	
1896-97.							
October.....	1,860	1,500	1,600	.368	.42	98,000	B.
November.....	13,400	1,780	6,630	1.52	1.70	395,000	B.
December.....	17,000	8,330	12,800	2.94	3.39	787,000	B.
January.....	10,700	6,400	7,870	1.81	2.09	484,000	B.
February.....	6,860	5,070	6,000	1.38	1.44	333,000	B.
March.....	8,330	4,240	5,180	1.19	1.37	319,000	B.
April.....	33,900	8,850	20,100	4.62	5.16	1,200,000	B.
May.....	30,900	21,100	27,400	6.30	7.26	1,680,000	B.
June.....	20,400	9,630	12,500	2.87	3.20	744,000	B.
July.....	9,370	5,070	7,790	1.79	2.06	479,000	B.
August.....	5,070	2,580	3,580	.823	.95	220,000	B.
September.....	2,750	2,250	2,450	.563	.63	146,000	B.
The year.....	33,900	1,500	9,510	2.19	29.67	6,890,000	
1897-98.							
October.....	2,250	1,860	1,970	.453	.52	121,000	B.
November.....	11,300	1,860	5,480	1.26	1.41	326,000	B.
December.....	12,200	8,080	10,000	2.30	2.65	615,000	B.
January.....	11,300	4,650	7,900	1.82	2.10	486,000	B.
February.....	19,000	4,440	11,100	2.55	2.66	616,000	B.
March.....	14,200	7,830	12,000	2.76	3.18	738,000	B.
April.....	26,800	7,340	14,500	3.33	3.72	863,000	B.
May.....	27,200	22,500	24,800	5.70	6.57	1,520,000	B.
June.....	25,200	12,200	19,100	4.39	4.90	1,140,000	B.
July.....	11,600	4,650	7,320	1.68	1.94	450,000	B.
August.....	4,650	2,750	3,470	.798	.92	213,000	B.
September.....	2,750	2,410	2,460	.566	.63	146,000	B.
The year.....	27,200	1,860	9,990	2.30	31.20	7,230,000	
1898-99.							
October.....	2,750	2,410	2,490	.572	.66	153,000	B.
November.....	3,100	2,750	3,040	.699	.78	181,000	B.
December.....	3,460	2,580	2,800	.614	.74	172,000	B.
January.....	11,000	3,460	5,840	1.34	1.54	359,000	B.
February.....	10,700	6,400	7,610	1.75	1.82	423,000	B.
March.....	6,400	5,950	6,170	1.42	1.64	379,000	B.
April.....	20,700	5,950	14,000	3.22	3.59	833,000	B.
May.....	28,900	17,300	23,500	5.40	6.23	1,440,000	B.
June.....	28,400	19,700	24,800	5.70	6.36	1,480,000	B.
July.....	19,300	6,400	11,900	2.74	3.16	732,000	B.
August.....	6,400	3,460	4,740	1.09	1.26	291,000	B.
September.....	3,460	2,750	3,230	.743	.83	192,000	B.
The year.....	28,900	2,410	9,170	2.11	28.61	6,640,000	

NOTE.—These results supersede those published in Water-Supply Paper 272, page 131. Discharge Aug. 18-22 and Sept. 5-9, 1895, interpolated.

Monthly discharge of Spokane River at Spokane—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1899-1900.							
October.....	3,460	2,580	2,870	0.660	0.76	176,000	B.
November.....	5,730	3,280	3,800	.874	.98	226,000	B.
December.....	10,400	6,400	8,460	1.94	2.24	520,000	B.
January.....	15,800	8,330	11,900	2.74	3.16	732,000	B.
February.....	10,700	5,950	7,450	1.71	1.78	414,000	B.
March.....	16,400	6,630	12,700	2.92	3.37	781,000	B.
April.....	17,000	13,400	15,700	3.61	4.03	934,000	B.
May.....	13,600	10,400	12,900	2.97	3.42	793,000	B.
June.....	10,400	5,510	7,360	1.69	1.89	438,000	B.
July.....	5,510	2,750	3,950	.908	1.05	243,000	B.
August.....	2,750	2,090	2,390	.549	.63	147,000	B.
September.....	2,410	2,010	2,150	.494	.55	128,000	B.
The year.....	17,000	2,010	7,640	1.76	23.86	5,530,000	
1900-1901.							
October.....	4,040	2,250	2,760	.634	.73	170,000	B.
November.....	5,730	4,040	5,330	1.23	1.37	317,000	B.
December.....	14,200	5,950	10,300	2.37	2.73	633,000	B.
January.....	11,600	7,580	9,690	2.23	2.57	596,000	B.
February.....	9,630	5,070	7,150	1.64	1.71	397,000	B.
March.....	19,000	10,400	14,500	3.33	3.84	892,000	B.
April.....	12,800	9,370	10,900	2.51	2.80	649,000	B.
May.....	22,200	13,000	19,400	4.46	5.14	1,190,000	B.
June.....	19,700	9,370	13,200	3.03	3.38	786,000	B.
July.....	9,110	4,240	6,320	1.45	1.67	389,000	B.
August.....	4,040	2,750	3,150	.724	.83	194,000	B.
September.....	2,580	2,410	2,440	.561	.63	145,000	B.
The year.....	22,200	2,250	8,780	2.02	27.40	6,360,000	
1901-2.							
October.....	2,410	2,090	2,330	.536	.62	143,000	B.
November.....	4,040	2,250	2,680	.616	.69	159,000	B.
December.....	5,290	3,840	4,490	1.03	1.19	276,000	B.
January.....	8,590	5,070	6,620	1.52	1.75	407,000	B.
February.....	8,330	4,240	5,350	1.23	1.28	297,000	B.
March.....	8,850	6,400	8,060	1.85	2.13	496,000	B.
April.....	12,400	6,170	9,420	2.17	2.42	561,000	B.
May.....	24,800	12,200	18,100	4.16	4.80	1,110,000	B.
June.....	24,000	8,330	14,800	3.40	3.79	881,000	B.
July.....	15,400	6,860	11,000	2.53	2.92	676,000	B.
August.....	6,400	3,100	4,370	1.00	1.15	269,000	B.
September.....	3,100	2,410	2,570	.591	.66	153,000	B.
The year.....	24,800	2,090	7,500	1.72	23.40	5,430,000	
1902-3.							
October.....	2,410	1,930	2,200	.506	.58	135,000	B.
November.....	5,290	2,250	3,910	.899	1.00	233,000	B.
December.....	5,950	4,650	4,990	1.15	1.33	307,000	B.
January.....	13,000	5,070	10,000	2.30	2.65	615,000	B.
February.....	10,700	4,650	6,880	1.58	1.64	382,000	B.
March.....	11,000	4,240	5,140	1.18	1.36	316,000	B.
April.....	19,300	11,000	13,400	3.08	3.44	797,000	B.
May.....	22,400	18,300	19,900	4.57	5.27	1,220,000	B.
June.....	23,900	12,100	19,300	4.44	4.95	1,150,000	B.
July.....	11,500	4,550	7,330	1.69	1.95	451,000	A.
August.....	4,550	2,260	3,150	.724	.83	194,000	A.
September.....	2,260	2,100	2,250	.517	.58	134,000	A.
The year.....	23,900	1,930	8,200	1.89	25.58	5,930,000	
1903-4.							
October.....	3,080	2,100	2,460	.566	.65	151,000	A.
November.....	5,160	2,910	4,000	.920	1.03	238,000	A.
December.....	7,870	5,160	6,670	1.54	1.78	413,000	A.
January.....	5,590	4,550	5,010	1.15	1.33	308,000	A.
February.....	4,750	3,780	4,100	.943	1.02	236,000	A.
March.....	11,500	4,750	8,880	2.04	2.35	546,000	A.
April.....	27,900	8,450	18,800	4.32	4.82	1,120,000	A.
May.....	27,600	18,500	22,100	5.08	5.86	1,360,000	A.
June.....	18,200	8,660	13,500	3.10	3.46	804,000	A.
July.....	8,450	3,660	5,710	1.31	1.51	351,000	A.
August.....	3,500	1,970	2,600	.598	.69	160,000	A.
September.....	1,970	1,420	1,620	.372	.42	96,200	A.
The year.....	27,900	1,420	7,970	1.83	24.92	5,780,000	

Monthly discharge of Spokane River at Spokane—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1904-5.							
October.....	1,420	1,300	1,370	0.315	0.36	84,200	A.
November.....	1,620	1,300	1,380	.317	.35	82,400	A.
December.....	1,900	1,620	1,770	.407	.47	109,000	A.
January.....	2,370	1,890	2,090	.480	.55	128,000	A.
February.....	2,360	1,860	2,050	.471	.49	114,000	A.
March.....	7,510	2,560	5,220	1.20	1.38	321,000	A.
April.....	9,040	6,720	7,380	1.70	1.90	439,000	A.
May.....	9,160	7,650	8,710	2.00	2.31	535,000	A.
June.....	9,510	5,840	7,970	1.83	2.04	474,000	A.
July.....	5,650	2,550	3,860	.887	1.02	238,000	A.
August.....	2,520	1,340	1,790	.411	.47	110,000	A.
September.....	1,800	1,240	1,560	.359	.40	92,500	A.
The year.....	9,510	1,240	3,770	.867	11.74	2,730,000	
1905-6.							
October.....	2,840	1,390	2,470	.....	.....	152,000	A.
November.....	2,880	2,070	2,410	.....	.....	144,000	A.
December.....	2,660	2,240	2,450	.....	.....	151,000	A.
January.....	3,390	2,190	2,600	.....	.....	160,000	A.
February.....	8,230	3,470	5,320	.....	.....	295,000	A.
March.....	8,250	5,860	7,050	.....	.....	433,000	A.
April.....	18,400	8,720	14,200	.....	.....	845,000	A.
May.....	17,100	9,380	12,800	.....	.....	787,000	A.
June.....	10,400	6,000	8,440	.....	.....	502,000	A.
July.....	5,820	2,460	3,790	.....	.....	233,000	A.
August.....	2,420	1,590	1,920	.....	.....	118,000	A.
September.....	1,970	1,410	1,610	.....	.....	95,800	A.
The year.....	18,400	1,390	5,410	1.24	16.83	3,920,000	
1906-7.							
October.....	1,910	1,360	1,620	.....	.....	99,600	A.
November.....	6,640	1,560	3,600	.....	.....	214,000	A.
December.....	8,870	4,000	5,210	.....	.....	320,000	A.
January.....	9,730	3,900	6,820	.....	.....	419,000	A.
February.....	13,500	3,940	7,540	.....	.....	419,000	A.
March.....	14,700	9,750	12,400	.....	.....	762,000	A.
April.....	22,300	12,300	17,400	.....	.....	1,040,000	A.
May.....	25,800	16,900	21,400	.....	.....	1,320,000	A.
June.....	21,000	7,470	14,100	.....	.....	839,000	A.
July.....	7,430	2,540	4,610	.....	.....	283,000	A.
August.....	2,660	2,120	2,380	.....	.....	146,000	A.
September.....	2,820	2,250	2,460	.....	.....	146,000	A.
The year.....	25,800	1,360	8,300	1.91	25.93	6,010,000	
1907-8.							
October.....	2,600	2,290	2,460	.....	.....	151,000	A.
November.....	2,480	2,000	2,250	.....	.....	134,000	A.
December.....	2,350	2,000	2,130	.....	.....	131,000	A.
January.....	2,350	2,020	2,150	.....	.....	132,000	A.
February.....	2,880	1,920	2,240	.....	.....	129,000	A.
March.....	16,100	3,250	8,900	.....	.....	547,000	A.
April.....	26,300	8,310	15,200	.....	.....	904,000	A.
May.....	23,700	15,000	19,200	.....	.....	1,180,000	A.
June.....	14,900	4,580	12,200	.....	.....	726,000	A.
July.....	3,480	2,190	2,720	.....	.....	167,000	A.
August.....	2,410	1,920	2,140	.....	.....	132,000	A.
September.....	2,040	1,680	1,850	.....	.....	110,000	A.
The year.....	26,300	1,680	6,120	1.41	19.19	4,440,000	
1908-9.							
October.....	2,240	1,740	1,930	.....	.....	119,000	A.
November.....	2,440	2,030	2,320	.....	.....	138,000	A.
December.....	2,540	2,220	2,390	.....	.....	147,000	A.
January.....	10,300	1,680	4,380	.....	.....	269,000	A.
February.....	8,180	2,970	5,030	.....	.....	279,000	A.
March.....	7,800	4,580	5,910	.....	.....	363,000	A.
April.....	11,100	8,100	9,100	.....	.....	541,000	B.
May.....	17,300	11,100	13,400	.....	.....	824,000	B.
June.....	19,400	8,440	13,900	.....	.....	827,000	B.
July.....	8,000	2,530	4,040	.....	.....	248,000	A.
August.....	2,640	2,440	2,540	.....	.....	156,000	A.
September.....	2,580	1,840	2,210	.....	.....	132,000	A.
The year.....	19,400	1,680	5,580	1.28	17.38	4,040,000	

Monthly discharge of Spokane River at Spokane—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1909-10.							
October.....	2,280	1,800	2,030	.....	.....	125,000	A.
November.....	17,100	1,940	5,640	.....	.....	336,000	B.
December.....	14,600	5,210	10,600	.....	.....	652,000	B.
January.....	4,800	3,050	3,620	.....	.....	223,000	B.
February.....	5,410	3,250	4,590	.....	.....	255,000	A.
March.....	28,100	3,120	17,700	.....	.....	1,090,000	A.
April.....	26,000	20,200	23,300	.....	.....	1,390,000	B.
May.....	25,400	13,100	18,800	.....	.....	1,160,000	A.
June.....	12,700	3,320	5,950	.....	.....	354,000	A.
July.....	3,460	2,920	3,180	.....	.....	196,000	B.
August.....	3,120	1,860	2,220	.....	.....	136,000	B.
September.....	2,490	1,810	2,000	.....	.....	119,000	B.
The year.....	28,100	1,800	8,340	1.92	26.06	6,040,000	
1910-11.							
October.....	2,370	1,810	2,170	.....	.....	133,000	B.
November.....	7,540	2,070	3,770	.....	.....	224,000	B.
December.....	6,860	3,820	5,480	.....	.....	337,000	A.
January.....	3,750	2,670	3,310	.....	.....	204,000	A.
February.....	3,460	1,960	2,940	.....	.....	163,000	A.
March.....	10,800	2,310	5,460	.....	.....	336,000	A.
April.....	15,300	9,590	11,700	.....	.....	696,000	A.
May.....	17,200	14,200	15,900	.....	.....	978,000	A.
June.....	13,700	4,950	9,260	.....	.....	551,000	A.
July.....	5,250	2,190	3,750	.....	.....	231,000	A.
August.....	2,920	1,650	2,220	.....	.....	136,000	A.
September.....	2,670	1,750	2,260	.....	.....	134,000	A.
The year.....	17,200	1,650	5,690	1.31	17.78	4,120,000	
1911-12.							
October.....	2,070	1,750	1,950	.....	.....	120,000	A.
November.....	3,880	1,850	2,550	.....	.....	152,000	A.
December.....	3,730	2,190	2,650	.....	.....	163,000	A.
January.....	5,600	2,070	2,590	.....	.....	159,000	A.
February.....	9,880	5,120	7,030	.....	.....	404,000	A.
March.....	6,450	3,730	4,730	.....	.....	291,000	A.
April.....	16,900	6,810	14,000	.....	.....	833,000	A.
May.....	21,200	15,800	19,000	.....	.....	1,170,000	A.
June.....	20,600	5,120	13,100	.....	.....	780,000	A.
July.....	5,440	1,750	3,140	.....	.....	193,000	A.
August.....	3,050	1,650	1,890	.....	.....	116,000	A.
September.....	4,800	2,430	3,300	.....	.....	196,000	A.
The year.....	21,200	1,650	6,300	1.45	19.73	4,580,000	
1912-13.							
October.....	3,050	1,960	2,520	.....	.....	155,000	A.
November.....	6,100	2,550	4,510	.....	.....	268,000	A.
December.....	4,960	3,050	3,820	.....	.....	235,000	A.
January.....	5,120	3,050	4,290	.....	.....	264,000	A.
February.....	5,280	3,310	4,140	.....	.....	230,000	A.
March.....	7,560	4,800	5,890	.....	.....	362,000	A.
April.....	29,600	8,360	19,500	.....	.....	1,160,000	A.
May.....	32,800	20,800	26,600	.....	.....	1,640,000	A.
June.....	33,200	11,300	21,600	.....	.....	1,290,000	A.
July.....	11,300	2,250	5,190	.....	.....	319,000	A.
August.....	2,140	1,810	1,960	.....	.....	121,000	A.
September.....	2,140	1,700	1,870	.....	.....	111,000	A.
The year.....	33,200	1,700	8,490	1.95	26.47	6,160,000	
1913-14.							
October.....	4,370	1,700	2,470	.....	.....	152,000	A.
November.....	4,860	2,360	3,650	.....	.....	218,000	A.
December.....	4,210	2,140	2,730	.....	.....	168,000	A.
January.....	7,070	2,140	3,000	.....	.....	184,000	A.
February.....	6,490	3,920	5,350	.....	.....	297,000	A.
March.....	13,000	6,680	9,910	.....	.....	609,000	A.
April.....	19,600	3,360	15,800	.....	.....	940,000	A.
May.....	17,200	9,180	15,000	.....	.....	922,000	A.
June.....	8,090	2,140	4,990	.....	.....	297,000	A.
July.....	2,470	1,810	2,060	.....	.....	127,000	A.
August.....	2,590	1,600	1,860	.....	.....	114,000	A.
September.....	2,250	1,500	1,670	.....	.....	99,400	A.
The year.....	19,600	1,500	5,700	1.31	17.78	4,130,000	

Monthly discharge of Spokane River at Spokane—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mille.	Inches.	Acre-feet.	
1914-15.							
October.....	1,810	1,400	1,580	.....	.....	97,200	A.
November.....	4,860	1,500	3,900	.....	.....	232,000	A.
December.....	4,370	2,140	3,350	.....	.....	206,000	A.
January.....	2,960	2,140	2,430	.....	.....	149,000	A.
February.....	2,360	1,700	1,980	.....	.....	110,000	A.
March.....	9,180	1,700	5,160	.....	.....	317,000	A.
April.....	11,000	8,300	10,200	.....	.....	607,000	A.
May.....	11,500	2,470	6,820	.....	.....	419,000	A.
June.....	9,460	2,220	4,630	.....	.....	276,000	A.
July.....	2,810	1,780	2,360	.....	.....	145,000	A.
August.....	2,220	1,890	1,950	.....	.....	120,000	A.
September.....	2,000	1,840	1,910	.....	.....	114,000	A.
The year.....	11,500	1,400	3,860	0.887	12.04	2,790,000	
1915-16.							
October.....	2,060	1,840	1,910	.....	.....	117,000	A.
November.....	2,450	1,890	2,000	.....	.....	119,000	A.
December.....	2,630	2,390	2,470	.....	.....	152,000	A.
January.....	4,180	2,450	2,750	.....	.....	169,000	A.
February.....	6,810	3,060	4,740	.....	.....	273,000	A.
March.....	25,100	5,700	13,700	.....	.....	842,000	A.
April.....	23,400	19,600	21,500	.....	.....	1,280,000	A.
May.....	28,200	18,400	22,700	.....	.....	1,400,000	A.
June.....	19,900	17,000	18,300	.....	.....	1,090,000	A.
July.....	17,000	3,330	11,000	.....	.....	676,000	A.
August.....	3,190	2,160	2,380	.....	.....	146,000	A.
September.....	2,220	2,110	2,130	.....	.....	127,000	A.
The year.....	28,200	1,840	8,800	2.02	27.42	6,390,000	
1916-17.							
October.....	2,120	2,000	2,070	.....	.....	127,000	A.
November.....	2,610	2,060	2,300	.....	.....	137,000	A.
December.....	2,420	2,180	2,330	.....	.....	143,000	A.
January.....	2,420	2,180	2,330	.....	.....	143,000	A.
February.....	3,140	2,240	2,780	.....	.....	154,000	A.
March.....	3,350	2,540	2,890	.....	.....	178,000	A.
April.....	26,500	3,350	14,200	.....	.....	845,000	A.
May.....	41,500	24,500	32,900	.....	.....	2,020,000	A.
June.....	37,700	16,000	25,800	.....	.....	1,540,000	A.
July.....	15,500	3,000	6,470	.....	.....	398,000	A.
August.....	3,000	2,480	2,730	.....	.....	163,000	A.
September.....	2,600	2,360	2,430	.....	.....	145,000	A.
The year.....	41,500	2,000	8,290	1.91	25.93	6,000,000	
1917-18.							
October.....	2,360	2,120	2,280	.....	.....	140,000	A.
November.....	2,300	1,620	1,980	.....	.....	118,000	A.
December.....	27,300	1,570	6,500	.....	.....	400,000	A.
January.....	39,600	10,800	24,400	.....	.....	1,500,000	A.
February.....	10,800	6,700	9,210	.....	.....	512,000	A.
March.....	14,400	5,410	7,730	.....	.....	475,000	A.
April.....	18,800	14,400	16,300	.....	.....	970,000	A.
May.....	18,200	10,900	15,100	.....	.....	928,000	A.
June.....	10,700	3,050	7,550	.....	.....	449,000	A.
July.....	2,980	1,830	2,200	.....	.....	135,000	A.
August.....	1,830	1,620	1,790	.....	.....	110,000	A.
September.....	1,830	1,720	1,750	.....	.....	104,000	A.
The year.....	39,600	1,570	8,070	1.86	25.25	5,840,000	
1918-19.							
October.....	1,880	1,720	1,760	.....	.....	108,000	A.
November.....	2,410	1,940	2,180	.....	.....	130,000	A.
December.....	6,420	2,290	3,890	.....	.....	239,000	A.
January.....	13,400	2,410	5,380	.....	.....	331,000	A.
February.....	11,100	3,210	6,390	.....	.....	355,000	A.
March.....	13,200	5,590	8,210	.....	.....	505,000	A.
April.....	23,900	13,700	19,100	.....	.....	1,140,000	A.
May.....	24,600	15,500	18,400	.....	.....	1,130,000	A.
June.....	15,500	2,980	7,750	.....	.....	461,000	A.
July.....	2,920	2,000	2,250	.....	.....	138,000	A.
August.....	2,050	1,670	1,780	.....	.....	109,000	A.
September.....	1,780	1,620	1,700	.....	.....	101,000	A.
The year.....	24,600	1,620	6,550	1.51	20.50	4,750,000	

NOTE.—Maximum discharge during period of record, 49,000 second-feet, May 31, 1894; minimum discharge, 1,240 second-feet Sept. 28-30, 1905. Records prior to Mar. 31, 1904, revised since originally published.

Yearly discharge of Spokane River at Spokane.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1892.....	21,800	1,300	1,510	Oct.....	6,140	1.41	19.19	4,450,000
1893.....	37,500	1,300	1,300	Oct.....	6,820	1.57	21.29	4,930,000
1894.....	49,000	1,500	2,380	Sept.....	10,000	2.30	31.27	7,260,000
1895.....	17,100	1,300	1,350	Sept.....	5,630	1.29	17.57	4,070,000
1896.....	21,400	1,300	1,300	Oct.....	8,030	1.85	25.15	5,840,000
1897.....	33,900	1,500	1,600	Oct.....	9,510	2.19	29.67	6,890,000
1898.....	27,200	1,860	1,970	Oct.....	9,990	2.30	31.20	7,230,000
1899.....	28,900	2,410	2,490	Oct.....	9,170	2.11	28.61	6,640,000
1900.....	17,000	2,010	2,150	Sept.....	7,640	1.76	23.86	5,530,000
1901.....	22,200	2,250	2,440	Sept.....	8,780	2.02	27.40	6,360,000
1902.....	24,800	2,090	2,330	Oct.....	7,500	1.72	23.40	5,430,000
1903.....	23,900	1,930	2,200	Oct.....	8,200	1.89	25.58	5,930,000
1904.....	27,900	1,420	1,620	Sept.....	7,970	1.83	24.92	5,780,000
1905.....	9,510	1,240	1,370	Oct.....	3,770	.867	11.74	2,730,000
1906.....	18,400	1,390	1,610	Sept.....	5,410	1.24	16.83	3,920,000
1907.....	25,800	1,360	1,620	Oct.....	8,300	1.91	25.93	6,010,000
1908.....	26,300	1,680	1,850	Sept.....	6,120	1.41	19.19	4,440,000
1909.....	19,400	1,680	1,930	Oct.....	5,580	1.28	17.38	4,040,000
1910.....	28,100	1,800	2,000	Sept.....	8,340	1.92	26.06	6,040,000
1911.....	17,200	1,650	2,170	Oct.....	5,690	1.31	17.78	4,120,000
1912.....	21,200	1,650	1,890	Aug.....	6,300	1.45	19.73	4,580,000
1913.....	33,200	1,700	1,870	Sept.....	8,490	1.95	26.47	6,160,000
1914.....	19,600	1,500	1,670	Sept.....	5,700	1.31	17.78	4,130,000
1915.....	11,500	1,400	1,580	Oct.....	3,860	.887	12.04	2,790,000
1916.....	28,200	1,840	1,910	Oct.....	8,800	2.02	27.42	6,390,000
1917.....	41,500	2,000	2,070	Oct.....	8,290	1.91	25.93	6,000,000
1918.....	39,600	1,570	1,750	Sept.....	8,070	1.86	25.25	5,840,000
1919.....	24,600	1,620	1,700	Sept.....	6,550	1.51	20.50	4,750,000
The period.	49,000	1,240	1,300	Oct., 1892 and 1895	7,310	1.68	22.83	5,300,000

SPOKANE RIVER BELOW LITTLE FALLS, NEAR LONG LAKE (75).

Water-stage recorder just above Chamokane Ferry, $1\frac{1}{2}$ miles below Little Falls power plant of Washington Water Power Co., 4 miles below Chamokane Creek, and about 5 miles below Long Lake, in Lincoln County.

Water is diverted above the station for irrigation. Flow is affected considerably by power regulation at Little Falls and Long Lake, and slightly by power regulation at Ninemile, Spokane, and Post Falls. Flow is also partly regulated at Coeur d'Alene Lake.

Drainage area, 6,380 square miles (revised); measured by engineers of Washington Water Power Co. on maps of Spokane drainage basin, scale half an inch to the mile, compiled from best sources available.

Monthly discharge of Spokane River below Little Falls, near Long Lake.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1912-13.							
October.....			3,400			209,000	B.
November.....	7,150		5,540			330,000	A.
December.....	6,610	3,820	4,740			291,000	A.
January.....	6,250	4,080	5,280			325,000	A.
February.....	6,430	4,350	5,220			290,000	B.
March.....	13,500	5,910	8,980			552,000	A.
April.....	30,000	14,000	22,600			1,340,000	A.
May.....	31,700	22,600	27,300			1,680,000	A.
June.....	31,700	13,500	22,800			1,360,000	A.
July.....	13,200	3,460	6,720			413,000	A.
August.....	3,240	2,560	2,920			180,000	A.
September.....	3,040	2,420	2,700			161,000	B.
The period.....	31,700	2,420	9,850	1.54	20.90	7,130,000	

Monthly discharge of Spokane River below Little Falls, near Long Lake—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1913-14.							
October.....	5,080	2,470	3,260	.....	.....	200,000	A.
November.....	5,740	3,140	4,380	.....	.....	261,000	A.
December.....	5,080	2,470	3,510	.....	.....	216,000	A.
January.....	7,750	2,840	4,390	.....	.....	270,000	B.
February.....	12,000	4,930	7,210	.....	.....	400,000	A.
March.....	15,600	9,870	12,400	.....	.....	762,000	A.
April.....	21,300	5,570	17,800	.....	.....	1,060,000	A.
May.....	19,700	11,700	17,000	.....	.....	1,050,000	A.
June.....	10,100	3,040	6,430	.....	.....	383,000	A.
July.....	3,240	2,470	2,880	.....	.....	177,000	A.
August.....	2,840	1,930	2,560	.....	.....	157,000	A.
September.....	2,660	1,910	2,300	.....	.....	137,000	A.
The year.....	21,300	1,910	7,000	1.10	14.93	5,070,000	
1914-15.							
October.....	2,650	2,030	2,370	.....	.....	146,000	B.
November.....	4,910	2,230	3,680	.....	.....	219,000	A.
December.....	4,660	2,310	2,860	.....	.....	176,000	B.
January.....	2,880	2,000	2,580	.....	.....	159,000	A.
February.....	3,600	2,550	2,940	.....	.....	163,000	A.
March.....	10,700	2,720	6,250	.....	.....	384,000	A.
April.....	12,700	10,100	11,700	.....	.....	696,000	A.
May.....	14,800	3,380	8,350	.....	.....	513,000	A.
June.....	11,700	2,930	5,810	.....	.....	346,000	A.
July.....	5,040	2,580	3,100	.....	.....	191,000	A.
August.....	3,320	2,400	2,660	.....	.....	164,000	A.
September.....	2,710	2,270	2,520	.....	.....	150,000	B.
The year.....	14,800	2,000	4,540	.712	9.66	3,310,000	
1915-16.							
October.....	3,480	2,180	2,650	.....	.....	163,000	A.
November.....	.....	1,820	2,690	.....	.....	160,000	B.
December.....	3,920	2,660	3,280	.....	.....	202,000	A.
January.....	4,930	3,040	3,460	.....	.....	213,000	A.
February.....	9,430	3,820	6,740	.....	.....	388,000	A.
March.....	29,400	7,150	17,000	.....	.....	1,050,000	A.
April.....	27,000	21,800	23,900	.....	.....	1,420,000	A.
May.....	27,800	20,200	24,000	.....	.....	1,480,000	A.
June.....	.....	18,900	19,700	.....	.....	1,170,000	B.
July.....	18,700	.....	13,200	.....	.....	812,000	B.
August.....	4,490	2,940	3,330	.....	.....	205,000	A.
September.....	2,940	2,740	2,830	.....	.....	168,000	A.
The year.....	29,400	1,820	10,200	1.60	21.78	7,430,000	
1916-17.							
October.....	2,920	2,610	2,810	.....	.....	173,000	A.
November.....	4,080	2,080	2,970	.....	.....	177,000	A.
December.....	3,200	2,800	3,040	.....	.....	187,000	A.
January.....	3,100	2,790	2,960	.....	.....	182,000	A.
February.....	4,080	2,780	3,580	.....	.....	199,000	A.
March.....	7,820	3,410	4,230	.....	.....	260,000	A.
April.....	26,800	6,100	16,700	.....	.....	994,000	A.
May.....	40,900	26,500	34,500	.....	.....	2,120,000	A.
June.....	40,100	19,100	29,200	.....	.....	1,740,000	A.
July.....	18,200	3,950	8,190	.....	.....	504,000	A.
August.....	3,930	3,120	3,550	.....	.....	218,000	A.
September.....	4,080	2,290	3,110	.....	.....	185,000	A.
The year.....	40,900	2,080	9,580	1.50	20.36	6,940,000	
1917-18.							
October.....	3,140	2,650	2,920	.....	.....	180,000	A.
November.....	3,100	2,340	2,760	.....	.....	164,000	A.
December.....	23,500	2,260	6,280	.....	.....	386,000	A.
January.....	38,700	12,200	25,700	.....	.....	1,580,000	A.
February.....	12,400	7,650	10,700	.....	.....	594,000	A.
March.....	15,400	6,560	8,910	.....	.....	548,000	A.
April.....	20,300	15,600	18,000	.....	.....	1,070,000	A.
May.....	20,500	12,400	17,100	.....	.....	1,050,000	A.
June.....	12,300	3,650	8,880	.....	.....	528,000	A.
July.....	4,300	2,320	2,870	.....	.....	176,000	A.
August.....	2,450	1,920	2,290	.....	.....	141,000	A.
September.....	2,330	1,720	2,120	.....	.....	126,000	A.
The year.....	38,700	1,720	9,050	1.42	19.28	6,540,000	

Monthly discharge of Spokane River below Little Falls, near Long Lake—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1918-19.							
October.....	2,420	1,880	2,200	.....	.....	136,000	A.
November.....	2,950	2,110	2,550	.....	.....	152,000	A.
December.....	6,420	2,600	4,320	.....	.....	266,000	A.
January.....	14,400	2,830	6,000	.....	.....	369,000	A.
February.....	12,800	.....	7,800	.....	.....	433,000	A.
March.....	16,500	4,690	10,400	.....	.....	640,000	A.
April.....	26,500	17,700	22,400	.....	.....	1,330,000	A.
May.....	27,600	15,800	21,000	.....	.....	1,290,000	A.
June.....	18,500	3,730	9,160	.....	.....	545,000	A.
July.....	3,990	2,550	3,060	.....	.....	188,000	A.
August.....	3,230	2,100	2,650	.....	.....	163,000	A.
September.....	3,350	2,220	2,570	.....	.....	153,000	A.
The year.....	27,600	1,880	7,830	1.23	16.70	5,660,000	

NOTE.—Maximum discharge during period of record, 41,300 second-feet at 8.30 p. m. May 18, 1917; minimum mean daily discharge, 1,720 second-feet Sept. 15, 1918; extreme minimum discharge was lower when water was below intake for parts of days during low-water seasons. Discharge, October, 1912, estimated by comparison with records of Spokane River at Spokane.

Yearly discharge of Spokane River below Little Falls, near Long Lake.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maxi- mum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1913.....	31,700	2,420	2,700	Sept.....	9,850	1.54	20.90	7,130,000
1914.....	21,300	1,910	2,300	Sept.....	7,000	1.10	14.93	5,070,000
1915.....	14,800	2,000	2,370	Oct.....	4,540	.712	9.66	3,310,000
1916.....	29,400	1,820	2,650	Oct.....	10,200	1.60	21.78	7,430,000
1917.....	40,900	2,080	2,810	Oct.....	9,580	1.50	20.36	6,940,000
1918.....	38,700	1,720	2,120	Sept.....	9,050	1.42	19.28	6,540,000
1919.....	27,600	1,880	2,220	Oct.....	7,830	1.23	16.70	5,660,000
The period.	40,900	1,720	2,120	Sept., 1918	8,290	1.30	17.66	6,010,000

LATAH CREEK ⁶ AT TEKOA (76).

Staff gage at footbridge in Tekoa, Whitman County, 1,000 feet above the mouth of North Fork.

Monthly discharge of Latah Creek at Tekoa.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
April.....	858	146	405	24,100	B.
May.....	138	14	50.1	3,080	B.
June.....	79	4.5	29.9	1,780	B.
July.....	56	1	5.6	344	B.
August.....	1	.2	.35	22	C.
September.....	1	.2	.28	17	C.
October.....	7.5	.2	4.6	283	B.
November.....	9	3	6.2	369	B.
December.....	14	6	9.2	566	B.
The period.....	.....	.....	.....	30,600	

⁶ Formerly called Hangman Creek.

NORTH FORK OF LATAH CREEK⁷ AT TEKOA (77).

Staff gage at Oregon-Washington Railroad & Navigation Co.'s bridge, just above highway bridge at Tekoa, Whitman County.

Monthly discharge of North Fork of Latah Creek at Tekoa.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1904.					
April 2-30.....	215	21.4	95.8	5,510	B.
May.....	21.4	.1	5.23	322	B.
June.....	6.2	.1	1.61	96	C.
July.....	1.5	.2	.62	38	C.
August.....	.5	.3	.42	26	C.
September.....	.4	.4	.40	24	C.
October.....	2.5	.4	1.61	99	C.
November.....	3.0	2.2	2.57	153	C.
December.....	6.0	2.5	3.57	220	B.
The period.....				6,500	

LITTLE SPOKANE RIVER NEAR SPOKANE (78).

Water-stage recorder (Pl. VII, A) 150 feet below county highway bridge, half a mile above mouth of river, and about 12 miles northwest of Spokane, in Spokane County.

Drainage area, 574 square miles (revised); measured on United States Geological Survey map, scale 1:500,000.

Monthly discharge of Little Spokane River near Spokane.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1913.							
April.....	1,900	935	1,410	2.46	2.74	83,900	A.
May.....	870	554	693	1.21	1.40	42,600	A.
June.....	568	437	499	.869	.97	29,700	A.
July.....	522	386	429	.747	.86	26,400	A.
August.....	386	362	375	.653	.75	23,100	A.
September.....	426	355	391	.681	.76	23,300	A.
October.....	445	362	394	.686	.79	24,200	A.
November.....	540	379	440	.767	.86	26,200	A.
December 1-15.....	480	422	438	.763	.43	13,000	A.
The period.....						292,000	

SANPOIL RIVER BASIN.

SANPOIL RIVER AT KELLER (79).

Staff gage just below highway bridge at Keller and three-fourths mile below Silver Creek, in Ferry County.

A small quantity of water is occasionally diverted above the gage for use in a cyanide plant.

Drainage area, 971 square miles; measured on topographic and Colville Indian Reservation maps.

⁷ Formerly called North Fork of Hangman Creek.

Monthly discharge of Sanpoil River at Keller.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
May.....	1,600	386	746	45,900	B.
June.....	715	180	345	20,500	A.
July.....	335	58	146	8,980	B.
August.....	107	36	53.6	3,300	B.
September.....	36	36	36.0	2,140	B.
The period.....				80,800	
1911-12.					
October.....	36	36	36.0	2,210	B.
November.....	36	36	36.0	2,140	C.
December.....	58	36	46.5	2,860	C.
January.....	128	58	77.8	4,780	D.
February.....	107	72	80.6	4,640	C.
March.....	219	56	81.6	5,020	A.
April.....	569	241	432	25,700	A.
May.....	795	436	602	37,000	A.
June.....	397	120	242	14,400	A.
July.....	128	61	94.9	5,840	B.
August.....	66	44	54.6	3,360	B.
September.....	65	48	54.1	3,220	B.
The year.....	795	36	153	111,000	
1912-13.					
October.....	69	46	53.6	3,300	A.
November.....	289	65	143	8,510	A.
December.....	124	59	97.7	6,010	B.
January.....			100	6,150	D.
February.....			90	5,000	D.
March.....	386		217	13,300	C.
April.....	1,240	147	752	44,700	B.
May.....	795	536	654	40,200	B.
June.....	569	252	349	20,800	A.
July.....	307	82	160	9,840	A.
August.....	78	38	54.8	3,370	A.
September.....	53	40	45.0	2,680	A.
The year.....	1,240		226	164,000	
1913-14.					
October.....	58	45	52.2	3,210	A.
November.....	166	51	73.5	4,370	A.
December.....	155	68	92.3	5,680	A.
January.....	569	68	225	13,800	A.
February.....	256	56	134	7,440	C.
March.....	770	273	544	33,500	A.
April.....	1,610	583	1,050	62,500	B.
May.....	963	428	684	42,100	B.
June.....	428	180	304	18,100	B.
July.....	170	47	95.6	5,880	B.
August.....	45	28	34.9	2,150	A.
September.....	57	26	40.3	2,400	A.
The year.....	1,610	26	278	201,000	
1914-15.					
October.....	135	40	71.8	4,410	A.
November.....	112	78	98.8	5,880	A.
December.....	108		80.5	4,950	D.
January.....			84.8	5,210	D.
February.....	121		105	5,830	D.
March.....	743	130	389	23,900	A.
April.....	1,080	500	766	45,600	B.
May.....	1,050	425	719	44,200	B.
June.....	992	268	541	32,200	B.
July.....	268	127	197	12,100	B.
August.....	160	62	96.0	5,900	B.
September.....	65	57	59.2	3,520	B.
The year.....	1,080	40	268	194,000	

Monthly discharge of Sanpoil River at Keller—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	68	57	59.2	3,640	B.
November.....	92	56	65.9	3,920	B.
December.....	102	.....	74.4	4,570	C.
January.....	.....	.....	60.7	3,730	D.
February.....	197	.....	103	5,920	D.
March.....	1,170	158	598	36,800	B.
April.....	1,920	1,090	1,560	92,800	B.
May.....	1,720	740	1,190	73,200	B.
June.....	970	484	681	40,500	B.
July.....	604	195	389	23,900	B.
August.....	186	74	120	7,380	B.
September.....	74	53	64.4	3,830	B.
The year.....	1,920	.....	414	300,000	
1916-17.					
October.....	69	55	59.5	3,660	B.
November.....	108	53	79.5	4,730	B.
April.....	1,010	101	622	37,000	B.
May.....	1,620	852	1,220	75,000	B.
June.....	1,090	270	582	34,600	B.
July.....	270	73	147	9,040	B.
August.....	73	34	49.3	3,030	B.
September.....	46	33	38.2	2,270	B.
October.....	42	31	36.4	2,240	B.
The period.....	.....	.....	.....	.....	.....

NOTE.—Maximum discharge during period of record, 1,920 second-feet at 7.30 a. m. Apr. 13, 1916; minimum discharge, 26 second-feet Sept. 1, 1914.

Yearly discharge of Sanpoil River at Keller.

Year ending Sept. 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.				
		Day.	Calendar month.		Annual mean.	
			Mean.	Month.		
1912.....	795	36	36.0	Oct., Nov.	153	111,000
1913.....	1,240	.....	45.0	Sept.....	226	164,000
1914.....	1,610	26	34.9	Aug.....	278	201,000
1915.....	1,080	40	59.2	Sept.....	268	194,000
1916.....	1,920	.....	59.2	Oct.....	414	300,000
The period.....	1,920	26	34.9	Aug., 1914.	268	194,000

NESPELEM RIVER BASIN.

NESPELEM RIVER AT NESPELEM (80).

Staff gage half a mile above Nespelem and 6 miles above mouth of river, in Okanogan County.

Drainage area, 122 square miles; measured on map of Colville Indian Reservation.

Monthly discharge of Nespelem River at Nespelem.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
May.....	225	94	143	8,790	A.
June.....	126	40	72.1	4,290	A.
July.....	66	12	27.4	1,680	A.
August.....	21	8	11.1	682	A.
September.....	9	8	8.7	518	A.
The period.....				16,000	
1911-12.					
October.....	13	9	12.1	744	A.
November.....	12	10	11.2	666	A.
December.....	10	9	9.6	590	A.
January.....	10	9	9.3	572	A.
February.....	13	10	11.8	679	A.
March.....	37	11	17.8	1,090	A.
April.....	122	37	74.8	4,450	A.
May.....	162	84	124	7,620	A.
June.....	84	28	52.6	3,130	A.
July.....	31	17	22.9	1,410	A.
August.....	18	13	15.6	959	A.
September.....	16	14	14.8	881	A.
The year.....	162	9	31.4	22,800	
1912-13.					
October.....	21	14	15.4	947	A.
November.....	37	16	24.9	1,480	A.
December.....	24	16	19.6	1,210	A.
January ^a			15	922	C.
February ^a			16	888	C.
March ^a			45	2,770	C.
April.....	176	31	113	6,720	B.
May.....	140	96	117	7,190	B.
June.....	108	46	62.4	3,710	B.
July.....	53	17	28.8	1,770	B.
August.....	17	7	9.65	593	B.
September.....	7.4	7	7.03	418	B.
The year.....	176	7.0	39.6	28,600	
1913-14.					
October.....	10.2	7.0	9.45	581	B.
November.....	24.0	10.2	14.4	857	B.
December.....	22.6	9.0	11.1	682	B.
January.....	38	10.2	29.8	1,830	B.
February.....	60	27	34.2	1,900	B.
March.....	200	64	138	8,480	A.
April.....	449	152	266	15,800	B.
May.....	239	88	177	10,900	B.
June.....	108	43	70.7	4,210	A.
July.....	37	13.5	21.3	1,310	A.
August.....	13.5	9.2	10.8	664	A.
September.....	13.5	9.5	10.5	625	B.
The year.....	449	7.0	66.1	47,800	
1914-15.					
October.....	16	9.6	11.5	707	C.
November.....	20	14	17.6	1,050	C.
December.....	21	12	14.9	916	C.
January.....	16	13	14.6	898	C.
February.....	27	13	16.0	889	C.
March.....	174	28	88.2	5,420	A.
April.....	255	124	183	10,900	A.
May.....	144	89	113	6,950	A.
June.....	124	46	73.7	4,390	A.
July.....	44	18	35.0	2,150	B.
August.....	27	9.1	13.2	812	C.
September.....	13	9.1	11.2	666	C.
The year.....	255	9.1	49.4	35,700	

^a Estimated by comparison with record of Sanpoil River at Keller.

Monthly discharge of Nesperlem River at Nesperlem—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	12	12	12.0	738	B.
November.....	15	12	14.0	833	B.
December.....	22	15	16.7	1,030	B.
January.....	25	7.5	12.3	756	B.
February.....	24	12	14.3	822	B.
March.....	271	15	87.6	5,390	A.
April.....	379	202	295	17,600	A.
May.....	331	147	221	13,600	A.
June.....	169	76	115	6,840	A.
July.....	76	26	46.3	2,850	B.
August.....	29	14	19.7	1,210	B.
September.....	14	12	12.5	744	B.
The year.....	379	7.5	72.1	52,400	
1916-17.					
October.....	11.5	10.1	10.9	670	B.
November.....	19.6	10.1	14.6	869	A.
December.....	19.6	10.1	14.7	904	A.
January.....	10.1	6.7	8.17	502	A.
February.....	16.0	10.1	13.5	750	A.
March.....	19.6	6.7	14.1	867	A.
April.....	185	16.0	83.3	4,960	B.
May.....	373	174	257	15,800	A.
June.....	218	55	120	7,140	B.
July.....	55	14.5	26.0	1,600	A.
August.....	13.8	9.0	10.9	670	A.
September.....	9.0	8.5	8.65	515	A.
The year.....	373	6.7	48.7	35,200	
1917-18.					
October.....	9.0	8.5	8.79	540	A.
November.....	10.1	9.0	9.74	580	A.
December.....	12.2	9.6	10.7	658	A.
January.....	13.8	11.2	12.3	756	A.
February.....	29	11.2	13.7	761	A.
March.....	51	13.8	21.5	1,320	A.
April.....	50	33	42.3	2,520	A.
May.....	40	21	30.5	1,880	A.
June.....	20	11.2	14.2	845	A.
July.....	11.2	8.2	9.12	561	A.
August.....	9.6	8.2	8.31	511	A.
September.....	8.2	8.0	8.01	477	A.
The year.....	51	8.0	15.8	11,400	
1918-19.					
October.....	9.6	8.0	8.27	508	A.
November.....	.....	8.2	10.3	613	A.
December.....	13.8	10.1	11.1	682	A.
January.....	64	9.0	20.9	1,290	A.
February.....	107	28	44.2	2,450	A.
March.....	241	37	84.7	5,210	A.
April.....	483	253	309	18,400	A.
May.....	277	107	164	10,100	A.
June.....	101	27	53.9	3,210	A.
July.....	26	11.2	17.6	1,080	A.
August.....	15.2	9.0	11.6	713	A.
September.....	13.3	9.0	10.7	637	A.
The year.....	483	8.0	61.9	44,900	

NOTE.—Maximum discharge during period of record, 483 second-feet Apr. 5, 1919; minimum discharge, 6.7 second-feet Jan. 16-27 and Mar. 1-2, 1917.

Yearly discharge of Nespalem River at Nespalem.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1912.....	162	9.0	9.3	Jan.....	31.4	22,800
1913.....	176	7.0	7.03	Sept.....	39.6	28,600
1914.....	449	7.0	9.45	Oct.....	66.1	47,800
1915.....	255	9.1	11.2	Sept.....	49.4	35,700
1916.....	379	7.5	12.0	Oct.....	72.1	52,400
1917.....	373	6.7	8.17	Jan.....	48.7	35,200
1918.....	51	8.0	8.01	Sept.....	15.8	11,400
1919.....	483	8.0	8.27	Oct.....	61.9	44,900
The period.....	483	6.7	8.01	Sept., 1918.	48.0	34,800

OKANOGAN RIVER BASIN.

OKANOGAN RIVER AT OKANOGAN (81).

Staff gage at Okanogan, a quarter of a mile above Salmon Creek, in Okanogan County.

Drainage area, 7,740 square miles; measured on topographic, Okanogan National Forest, Colville Indian Reservation, and Canadian Railway Belt maps.

Monthly discharge of Okanogan River at Okanogan.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
May 10-31.....	8,550.	4,700	6,590	288,000	B.
June.....	15,800	7,200	11,100	660,000	B.
July.....	7,940	2,260	3,460	274,000	B.
August.....	2,260	1,180	1,750	108,000	B.
September.....	1,900	720	1,380	82,100	B.
The period.....				1,410,000	
1911-12.					
October.....	1,370	1,020	1,070	65,800	A.
November.....	1,180	880	997	59,300	A.
December.....	1,100	1,020	1,050	64,600	A.
January.....	1,020	1,020	1,020	62,700	B.
February.....	1,100	950	1,000	57,500	C.
March.....	950	820	869	53,400	B.
April.....	2,260	950	1,530	91,000	A.
May.....	12,900	2,500	8,120	499,000	B.
June.....	9,640	5,150	7,630	454,000	B.
July.....	5,600	2,750	4,100	252,000	A.
August.....	2,620	1,680	2,160	133,000	A.
September.....	1,790	1,270	1,590	94,600	A.
The year.....	12,900	820	2,600	1,890,000	
1912-13.					
October.....	1,370	1,180	1,260	77,500	A.
November.....	1,370	1,180	1,280	76,200	A.
December.....	1,270	1,100	1,130	69,500	B.
January.....			1,000	61,500	C.
February.....			900	50,000	D.
March.....	1,020	880	948	58,300	B.
April.....	2,880	880	1,680	100,000	A.
May.....	14,200	2,500	7,160	440,000	B.
June.....	17,600	3,340	12,200	726,000	B.
July.....	8,140	3,270	5,150	317,000	B.
August.....	3,140	1,680	2,300	141,000	A.
September.....	2,020	1,370	1,610	95,800	A.
The year.....	17,600		3,060	2,210,000	

Monthly discharge of Okanogan River at Okanogan, —Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1913-14.					
October.....	2,020	1,270	1,630	100,000	A.
November.....	1,790	1,470	1,590	94,600	A.
December.....			1,370	84,200	B.
January.....			1,520	93,500	C.
February.....			1,230	68,300	C.
March.....	1,570	1,100	1,250	76,900	A.
April.....	4,850	1,370	3,330	198,000	A.
May.....	13,700	4,400	9,480	583,000	B.
June.....	12,400	6,060	8,650	515,000	B.
July.....	6,060	2,110	3,990	245,000	A.
August.....	2,080	1,180	1,610	99,000	A.
September.....	1,270	1,100	1,160	69,000	A.
The year.....	13,700		3,070	2,230,000	
1914-15.					
October.....	1,360	1,270	1,290	79,300	A.
November.....	1,740	1,270	1,500	89,300	A.
December.....			1,110	68,200	C.
January.....			972	59,800	C.
February.....			1,070	59,400	C.
March.....	1,190	965	1,080	66,400	A.
April.....	5,170	1,270	3,180	189,000	A.
May.....	7,220	3,850	5,420	333,000	A.
June.....	6,300	3,160	4,580	273,000	A.
July.....	3,160	2,180	2,670	164,000	A.
August.....	2,650	1,360	1,900	117,000	A.
September.....	1,360	1,110	1,180	70,200	A.
The year.....	7,220		2,170	1,570,000	
1915-16.					
October.....	2,050	1,040	1,190	73,200	A.
November.....	1,940	1,130	1,430	85,100	A.
December.....	1,210		1,050	64,600	B.
January.....			771	47,400	C.
February.....	1,550		1,120	64,400	C.
March.....	2,490	1,290	1,860	114,000	A.
April.....	5,480	1,840	2,850	170,000	A.
May.....	14,000	5,480	9,640	593,000	A.
June.....	22,200	10,500	15,500	922,000	B.
July.....	15,900	4,570	8,730	537,000	A.
August.....	4,270	2,180	2,980	183,000	A.
September.....	2,220	1,420	1,710	102,000	A.
The year.....	22,200		4,070	2,960,000	
1916-17.					
October.....	1,380	1,030	1,200	73,800	A.
November.....	1,100	890	988	58,800	A.
December.....	960	660	841	51,700	A.
January.....	890	660	794	48,800	A.
February.....	890	660	808	44,900	A.
March.....	960	770	863	53,100	A.
April.....	1,100	770	886	52,700	A.
May.....	16,100	1,180	5,980	368,000	A.
June.....	16,100	10,200	13,100	780,000	A.
July.....	9,900	2,830	5,790	356,000	A.
August.....	2,710	1,340	1,850	114,000	A.
September.....	1,430	960	1,140	67,800	A.
The year.....	16,100	660	2,860	2,070,000	
1917-18.					
October.....	1,100		1,020	62,700	D.
November.....	1,920	960	1,170	69,600	B.
December.....	1,180	520	1,000	61,500	A.
January.....	5,600	1,180	2,320	143,000	C.
February.....	1,520	960	1,180	65,500	A.
March.....	1,130	890	979	60,200	A.
April.....	5,280	1,100	2,330	139,000	A.
May.....	12,900	6,270	9,170	564,000	A.
June.....	16,200	6,370	11,400	678,000	A.
July.....	5,930	2,470	3,640	224,000	A.
August.....	2,360	1,300	1,800	111,000	A.
September.....	1,260	770	928	55,200	A.
The year.....	16,200	520	3,080	2,230,000	

Monthly discharge of Okanogan River at Okanogan,—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1918-19.					
October.....		770	1,020	62,700	B.
November.....		770	1,080	64,300	D.
December.....	1,100	660	890	54,700	A.
January.....	1,920	610	936	57,600	A.
February.....	1,030	710	857	47,600	A.
March.....	1,720	710	901	55,600	A.
April.....	7,360	986	2,380	142,000	C.
May.....	18,000	6,240	10,100	621,000	A.
June.....	14,900	9,200	11,700	696,000	A.
July.....	8,980	2,410	5,340	328,000	A.
August.....	2,410	1,100	1,760	108,000	A.
September.....	1,410	826	1,070	63,700	A.
The year.....	18,000	610	3,180	2,300,000	

NOTE.—Maximum discharge during period of record, 22,200 second-feet June 20, 1916; minimum discharge, 520 second-feet Dec. 28, 1917.

Yearly discharge of Okanogan River at Okanogan.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1912.....	12,900	820	869	Mar.....	2,600	1,890,000
1913.....	17,600		900	Feb.....	3,060	2,210,000
1914.....	13,700		1,160	Sept.....	3,070	2,230,000
1915.....	7,220		972	Jan.....	2,170	1,570,000
1916.....	22,200		771	Jan.....	4,070	2,960,000
1917.....	16,100	660	794	Jan.....	2,860	2,070,000
1918.....	16,200	520	928	Sept.....	3,080	2,230,000
1919.....	18,000	610	857	Feb.....	3,180	2,300,000

SIMILKAMEEN RIVER NEAR OROVILLE (82).

Staff gage at Okanogan Valley Power Co.'s plant, 4 miles above Oroville, 5 miles above mouth, and below all tributaries, in Okanogan County.

The West Okanogan Irrigation District has diverted from 75 to 120 second-feet from the river above the gaging station since the irrigation season of 1916.

Drainage area, 3,450 square miles; measured on topographic and Canadian Railway Belt maps.

Monthly discharge of Similkameen River near Oroville.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1911.					
June.....	16,500	5,700	10,500	625,000	B.
July.....	6,490	1,330	3,190	196,000	B.
August.....	1,510	642	1,040	64,000	B.
September.....	1,270	642	955	56,800	B.
The period.....				942,000	
1911-12.					
October.....	865	564	662	40,700	B.
November.....	730	420	554	33,000	C.
December.....	602	490	518	31,900	B.
January.....	642	388	523	32,200	C.
February.....	602	454	509	29,300	B.
March.....	526	388	425	26,100	A.
April.....	1,630	526	1,040	61,900	A.
May.....	12,600	1,750	7,450	458,000	A.
June.....	8,340	3,070	6,130	365,000	A.
July.....	4,150	1,210	2,350	144,000	A.
August.....	1,160	775	964	59,300	A.
September.....	865	602	707	42,100	A.
The year.....	12,600	388	1,820	1,320,000	
1912-13.					
October.....	685	526	578	35,500	A.
November.....	685	564	598	35,600	A.
December.....	602	454	507	31,200	A.
January.....	490	304	438	26,900	C.
February.....	550	317	439	24,400	C.
March.....	490	304	443	27,200	B.
April.....	2,210	404	1,090	64,900	A.
May.....	13,900	1,690	6,670	410,000	A.
June.....	17,900	6,850	10,600	631,000	A.
July.....	6,370	1,330	3,140	193,000	A.
August.....	1,270	642	976	60,000	A.
September.....	1,330	602	766	45,600	A.
The year.....	17,900	304	2,190	1,590,000	
1913-14.					
October.....	1,390	564	883	54,300	A.
November.....	1,010	602	802	47,700	A.
December.....	730	404	568	34,900	A.
January.....	960	490	671	41,300	A.
February.....	564	470	520	28,900	C.
March.....	820	454	595	36,600	A.
April.....	3,790	685	2,370	141,000	A.
May.....	12,800	2,990	8,540	525,000	A.
June.....	11,200	4,350	7,140	425,000	A.
July.....	4,350	1,010	2,310	142,000	A.
August.....	1,010	454	671	41,300	A.
September.....	685	420	512	30,500	A.
The year.....	12,800	404	2,140	1,550,000	
1914-15.					
October.....	685	564	615	37,800	A.
November.....	1,010	642	840	50,000	A.
December.....	865		553	34,000	B.
January.....			343	21,100	C.
February.....	454		410	22,800	B.
March.....	602	388	452	27,800	B.
April.....	4,350	602	2,400	143,000	A.
May.....	5,810	2,750	4,280	263,000	A.
June.....	4,350	1,810	2,980	177,000	A.
July.....	1,750	1,110	1,470	90,400	A.
August.....	1,630	526	914	56,200	A.
September.....	526	454	478	28,400	A.
The year.....	5,810		1,320	952,000	

Monthly discharge of Similkameen River near Oroville—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	1,630	437	632	38,900	A.
November.....	1,270	564	825	49,100	A.
December.....			461	28,300	C.
January.....			404	24,800	C.
February.....	960		629	36,200	B.
March.....	1,690	642	1,110	68,200	A.
April.....	4,750	820	2,140	127,000	A.
May.....	12,800	4,950	8,740	537,000	A.
June.....	20,400	9,720	13,600	809,000	A.
July.....	11,600	2,990	6,800	418,000	A.
August.....	2,830	970	1,710	105,000	A.
September.....	1,260	617	829	49,300	A.
The year.....	20,400		3,160	2,290,000	
1916-17.					
October.....	662	531	592	36,400	A.
November.....	862		583	34,700	C.
December.....			475	29,200	D.
January.....			429	26,400	D.
February.....			395	21,900	D.
March.....			430	26,400	C.
April.....	758	435	519	30,900	A.
May.....	15,900	758	5,830	358,000	A.
June.....	15,000	8,260	11,400	678,000	A.
July.....	8,520	1,640	4,380	269,000	A.
August.....	1,580	531	927	57,000	A.
September.....	531	382	449	26,700	A.
The year.....	15,900		2,200	1,590,000	
1917-18.					
October.....	531	382	441	27,100	A.
November.....	1,380	453	690	41,100	A.
December.....	4,340		799	49,100	B.
January.....	5,050		1,790	110,000	B.
February.....			746	41,400	C.
March.....	709	617	661	40,600	A.
April.....	6,040	809	2,240	133,000	A.
May.....	13,200	5,380	8,840	544,000	A.
June.....	16,700	4,740	10,000	595,000	A.
July.....	4,540	1,380	2,540	156,000	B.
August.....	1,320	709	986	60,600	B.
September.....	662	348	446	26,500	B.
The year.....	16,700	348	2,540	1,820,000	
1918-19.					
October.....	1,140	380	636	39,100	A.
November.....	901	361	658	39,200	A.
December.....	845		563	34,600	B.
January.....	736		500	30,700	B.
February.....	510		444	24,700	B.
March.....	534		444	27,300	A.
April.....	6,980	558	2,080	124,000	A.
May.....	19,100	5,600	9,820	604,000	A.
June.....	12,200	7,610	9,780	582,000	A.
July.....	6,980	1,520	3,980	245,000	A.
August.....	1,710	510	973	59,800	A.
September.....	901	400	514	30,600	A.
The year.....	19,100		2,540	1,840,000	

NOTE.—Maximum discharge during period of record, 20,600 second-feet at 7 a. m. June 19, 1916; minimum discharge estimated at 230 second-feet Jan. 31, 1917, when stage-discharge relation was affected by ice.

Yearly discharge of Similkameen River near Oroville.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1912.....	12,600	388	425	Mar.....	1,820	1,320,000
1913.....	17,900	304	438	Jan.....	2,190	1,590,000
1914.....	12,800	404	512	Sept.....	2,140	1,550,000
1915.....	5,810	.....	343	Jan.....	1,320	952,000
1916.....	20,400	.....	404	Jan.....	3,160	2,290,000
1917.....	15,900	.....	395	Feb.....	2,200	1,590,000
1918.....	16,700	348	441	Oct.....	2,540	1,820,000
1919.....	19,100	.....	444	Feb., Mar.	2,540	1,840,000
The period.....	20,400	.....	343	Jan., 1915	2,240	1,620,000

SINLAHEKIN CREEK NEAR LOOMIS (83).

Staff gage near highway bridge on main highway between Loomis and Conconully, 3 1/2 miles from Loomis, in Okanogan County.

Drainage area, 88 square miles (revised); measured on topographic map.

Monthly discharge of Sinlahekin Creek near Loomis.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy
	Maximum.	Minimum.	Mean.		
1904.					
January.....	22	11	15.8	972	C.
February.....	66	22	39.2	2,260	C.
March.....	28	11	13.3	818	B.
April.....	266	25	133	7,910	B.
May.....	251	166	21.3	1,310	B.
June.....	166	49	106	6,310	B.
July.....	49	19	29.4	1,810	B.
August.....	19	13	14.3	879	B.
September.....	16	13	13.2	786	B.
October.....	49	13	19.1	1,170	B.
November.....	28	22	22.1	1,320	B.
December.....	22	19	19.2	1,180	C.
The year.....	266	11	37.2	26,700	

JOHNSON CREEK NEAR RIVERSIDE (84).

Staff gage and weir at Sogle ranch, near mouth of creek and 1 mile southwest of Riverside, in Okanogan County.

Monthly discharge of Johnson Creek near Riverside.

[Drainage area, 66 square miles.]

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1903.					
May 29-31.....	3.8	3.4	3.6	21	A.
June.....	5.1	2.2	3.6	214	A.
July.....	6.5	3.0	4.2	258	A.
August.....	7.0	1.9	3.6	221	A.
September.....	6.7	4.2	5.2	309	A.
The period.....				1,020	

Monthly discharge of Johnson Creek near Riverside—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1903-4.					
October.....	6.5	3.2	5.1	314	A.
November.....	7.7	4.8	6.2	369	A.
December.....	30.7	4.4	8.0	492	A.
January.....	7.7	4.9	6.10	375	A.
February.....	6.7	3.2	5.47	315	A.
March.....	12.5	5.8	8.58	528	A.
April.....	18.4	12.8	15.9	946	A.
May.....	14.7	7.5	10.4	640	A.
June.....	11.0	7.2	8.48	505	A.
July.....	9.9	7.2	8.33	512	A.
The period.....				5,000	
1905.					
May.....	11.7	4.6	8.64	531	A.
June.....	13.6	6.3	8.36	497	A.
July.....	10.8	4.6	6.43	395	A.
August.....	6.7	5.4	5.99	368	A.
September.....	12.5	5.8	7.19	428	A.
The period.....				2,220	
1905-6.					
October.....	9.3	6.8	7.81	480	A.
November.....	12.5	7.9	8.56	509	A.
December.....	11.5	7.6	8.65	532	A.
January.....	33.6	4.6	9.44	580	A.
February.....	17.5	8.1	10.4	578	A.
March.....	13.0	7.6	9.02	555	A.
April.....	12.2	5.6	8.16	486	A.
May.....	9.8	1.8	3.88	239	A.
June.....	6.8	3.1	5.18	308	A.
July.....	3.3	1.0	2.12	130	A.
August.....	3.8	1.0	1.88	116	A.
September.....	4.9	2.6	3.84	228	A.
The year.....	33.6	1.0	6.55	4,740	
1906-7.					
October.....	4.8	4.1	4.44	273	A.
November.....	8.4	4.8	6.22	370	A.
December.....	8.5	3.4	6.78	417	B.
January.....	5.3	2.8	4.06	250	B.
February.....	7.9	2.6	5.28	293	B.
March.....	9.5	7.6	8.04	494	B.
April.....	8.4	5.6	6.94	413	B.
May.....	7.1	1.3	3.77	232	B.
June.....	5.3	1.7	2.84	169	B.
July.....	3.4	1.7	2.49	153	B.
August.....	2.8	1.4	2.21	136	B.
September.....	4.0	2.8	3.43	204	B.
The year.....	9.5	1.3	4.70	3,400	
1907.					
October.....	4.4	3.4	3.90	240	B.
November.....	5.6	4.4	4.88	290	B.
December.....	19.3	4.2	7.37	453	B.
The period.....				983	

SALMON CREEK NEAR CONCONULLY⁸ (85).

Staff gage from May 27, 1903, to July 5, 1910, at Jones ranch, in sec. 31, T. 34 N., R. 26 E., 3 miles above Okanogan; since July 6, 1910, at weir half a mile below Conconully reservoir, 2 miles south of Conconully, and 14 miles above Okanogan, in Okanogan County.

Flow regulated at Salmon Lake and Conconully reservoirs. Monthly summaries of flow for 1912-1918 have been corrected for storage.

Drainage area, at lower station, 164 square miles; at upper station, 121 square miles; measured on topographic maps.

⁸ Formerly described as near Malott and near Okanogan.

Monthly discharge of Salmon Creek near Conconully.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903.					
April 12-30.....	86	22	41	1,540	A.
May.....	212	51	124	7,620	A.
June.....	429	45	170	10,100	A.
July.....	86	21	38	2,340	A.
August.....	45	18	24	1,480	A.
September.....	31	20	23	1,370	A.
The period.....				24,400	
1903-4.					
October.....	51	21	24	1,480	A.
November.....	27	17	22	1,310	A.
December.....	27	16	21	1,290	B.
January.....	22	11	14.7	904	B.
February.....	16	11	13.5	777	A.
March.....	27	11	15.7	965	A.
April.....	577	17	224	13,300	A.
May.....	451	231	332	20,400	A.
June.....	310	108	195	11,600	A.
July.....	112	19	51.1	3,140	A.
August.....	30	12	20.0	1,230	A.
September.....	22	11	15.1	898	A.
The year.....	577	11	78.9	57,300	
1904-5.					
October.....	61	11	20.1	1,240	A.
November.....	29	16	19.3	1,150	A.
December.....	19	.....	16.2	996	C.
January.....	20	11	15.0	922	B.
February.....	20	10	14.1	783	B.
March.....	46	25	36.3	2,230	A.
April.....	202	24	87.5	5,210	A.
May.....	194	116	146	8,980	A.
June.....	410	134	215	12,800	A.
July.....	182	31	85.4	5,250	A.
August.....	43	16	30.3	1,860	B.
September.....	28	10	16.2	964	B.
The year.....	410	10	58.6	42,400	
1905-6.					
October.....	31	10	18.3	1,120	B.
November.....	23	7	13.7	815	C.
December.....	16	8	12.8	787	C.
January.....	14.5	11.1	12.6	775	C.
February.....	22.0	8.2	12.2	678	C.
March.....	84.0	10.8	16.4	1,010	C.
April.....	109	41	70.3	4,180	B.
May.....	386	52	109	6,700	B.
June.....	260	91	158	9,400	B.
July.....	91	19.1	43.5	2,670	B.
August.....	25	7.0	12.0	738	C.
September.....	10.2	5.8	7.63	454	C.
The year.....	386	5.8	40.5	29,300	
1906-7.					
October.....	13.5	7.8	10.1	621	C.
November.....	78	11.7	19.9	1,180	C.
December.....	13.5	6.2	11.5	707	C.
January.....	11.1	8.4	9.29	571	C.
February.....	11.1	8.6	9.54	530	C.
March.....	12.5	8.6	10.8	664	C.
April.....	74	11.1	35.3	2,100	B.
May.....	363	78	214	13,200	B.
June.....	338	91	166	9,880	B.
July.....	78	12.5	42.6	2,620	C.
August.....	43	11.7	26.1	1,600	C.
September.....	37.0	11.7	17.2	1,020	C.
The year.....	363	6.2	47.9	34,700	

Monthly discharge of Salmon Creek near Conconully—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1907-8.					
October.....	13.5	11.1	11.6	713	C.
November.....	15.5	7.8	12.9	768	C.
December.....	12.5	8.6	11.1	682	C.
January.....	12.5	6.2	10.1	621	C.
February.....	12.5	6.2	9.16	527	C.
March.....	23.0	9.6	15.7	965	C.
April.....	75.0	10.8	35.7	2,120	C.
May.....	163.0	61.0	125	7,690	B.
June.....	214.0	35.0	131	7,800	B.
July.....	35.0	6.2	20.0	1,230	C.
August.....	33.0	10.8	22.5	1,380	C.
September.....	11.6	7.4	8.17	486	C.
The year.....	214	6.2	34.4	25,000	
1908-9.					
October.....	59.0	3.0	9.11	560	C.
November.....	45.0	10.8	14.2	845	C.
December.....	9.6	5.0	7.62	469	C.
January.....	7.4	2.9	5.20	320	D.
February.....	12	7.4	9.99	555	D.
March.....	67	7.4	23.7	1,460	D.
April.....	50	18	27.9	1,660	D.
May.....	166	26	83.0	5,100	D.
June.....	166	35	116	6,900	D.
July.....	75	12	31.3	1,920	D.
August.....	51	41	46.1	2,830	D.
September.....	43	12	24.2	1,440	D.
The year.....	166	2.9	33.3	24,100	
1909-10.					
October.....	11	2.9	6.27	386	D.
November.....	43	5.6	21.7	1,290	D.
December.....	23	8.0	11.6	713	D.
January.....	29	3	8.4	516	D.
February.....	14	6	9.4	522	C.
March.....	81	5	25.4	1,560	C.
April.....	12	5	8.6	512	C.
May.....	81	17	61.2	3,760	C.
June.....	75	55	66.8	3,970	C.
July.....	77.7	8	61.5	3,780	B.
August.....	75.6	50.0	56.8	3,490	B.
September.....	48.5	6.5	12.9	766	B.
The year.....	77.7	2.9	29.4	21,300	
1910-11.					
October.....	6.0	0.0	2.67	164	C.
November.....	1.5	1.5	1.50	90	C.
December.....	1.5	1.5	1.50	93	C.
January.....	3.5	1.0	2.54	156	C.
February.....	3.5	1.8	2.02	112	C.
March.....	1.8	1.8	1.80	111	C.
April.....	46.4	2.1	12.2	728	A.
May.....	70.4	5.1	43.4	2,670	A.
June.....	103	9.4	68.1	4,050	A.
July.....	107	9.4	81.8	5,030	A.
August.....	93.0	4.3	28.0	1,720	A.
September.....	4.3	.4	1.18	70	C.
The year.....	107	.0	20.6	15,000	

Monthly discharge of Salmon Creek near Conconully—Continued.

Month.	Observed discharge in second-feet			Run-off in acre-feet.			Mean discharge with-out storage in second-feet.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.		
1911-12.								
October.....	10.0	1.2	4.61	283	+98	381	6.18	B.
November.....	4.7	1.5	2.71	161	+256	417	7.01	C.
December.....	1.5	1.5	1.50	92.2	+693	785	12.8	C.
January.....	1.7	.8	1.26	77.5	+310	388	6.31	C.
February.....	.8	.8	.80	46.0	+267	313	5.44	C.
March.....	1.5	.8	1.21	74.4	+408	482	7.84	C.
April.....	7.5	1.5	2.29	136	+1,050	1,190	20.0	C.
May.....	108	2.1	24.9	1,530	+5,880	7,410	121	A.
June.....	126	8.6	96.8	5,760	-641	5,120	86.0	A.
July.....	115	6.5	86.7	5,330	-3,540	1,790	29.1	A.
August.....	103	1.9	68.7	4,220	-3,280	940	15.3	A.
September.....	4.8	1.3	2.15	128	+346	474	7.97	C.
The year...	126	.8	24.6	17,800	+1,850	19,700	27.1	
1912-13.								
October.....	8.4	1.7	5.27	324	+442	766	12.5	B.
November.....	1.7	1.7	1.70	101	+386	487	8.18	C.
December.....	2.5	1.7	1.78	109	+422	531	8.64	C.
January.....	1.9	1.5	1.71	105	+272	377	6.13	C.
February.....	1.9	1.7	1.89	105	+186	291	5.24	C.
March.....	14.8	1.9	2.96	182	+166	348	5.66	C.
April.....	9.2	2.1	5.86	349	+944	1,290	21.7	B.
May.....	79	8.9	46.4	2,850	+3,650	6,500	106	A.
June.....	105	9.4	67.0	3,990	+3,260	7,250	122	A.
July.....	120	32	92.3	5,680	-3,500	2,180	35.5	A.
August.....	110	94	99.9	6,140	-5,170	970	15.8	A.
September.....	82	1.9	5.33	317	-64	253	4.25	B.
The year...	120	1.5	28.0	20,300	+994	21,200	29.3	
1913-14.								
October.....	5.7	1.9	3.47	213	+294	507	8.25	B.
November.....	4.7	1.9	2.04	121	+413	534	8.97	C.
December.....	1.9	1.9	1.90	117	+268	385	6.26	C.
January.....	2.1	1.9	2.07	127	+554	681	11.1	C.
February.....	2.1	2.1	2.10	117	+237	354	6.37	C.
March.....	2.5	2.1	2.27	140	+449	589	9.58	C.
April.....	3.9	2.5	3.01	179	+4,260	4,440	74.6	C.
May.....	246	3.9	114	7,010	+5,620	12,600	205	A.
June.....	243	93	156	9,280	-153	9,130	153	A.
July.....	125	91	104	6,400	-4,270	2,130	34.6	A.
August.....	119	72	108	6,640	-6,240	400	6.50	A.
September.....	90	1.7	5.66	337	+222	115	1.93	B.
The year...	246	1.7	42.4	30,700	+1,650	31,900	44.1	
1914-15.								
October.....	6.7	1.7	1.93	119	+943	1,060	17.2	C.
November.....	3.2	1.7	2.08	124	+1,000	1,120	18.8	C.
December.....	2.1	2.1	2.10	129	+524	653	10.6	C.
January.....	3.2	2.1	2.71	167	+417	584	9.50	C.
February.....	2.8	2.8	2.80	156	+390	546	9.83	C.
March.....	3.2	2.8	2.81	173	+1,020	1,190	19.4	C.
April.....	74	3.2	11.5	684	+5,320	6,000	101	C.
May.....	292	52	152	9,350	+1,040	10,400	169	A.
June.....	176	105	128	7,620	-933	6,690	112	A.
July.....	122	22	97.7	6,010	-2,850	3,160	51.4	A.
August.....	124	110	118	7,260	-6,290	970	158	A.
September.....	108	1.9	14.8	881	-742	139	2.33	C.
The year...	292	1.7	45.0	32,700	-161	32,500	44.9	
1915-16.								
October.....	19	2.5	4.47	275	+265	540	8.78	B.
November.....	23	3.2	6.88	409	+262	671	11.3	B.
December.....	3.6	3.6	3.60	221	+349	570	9.27	C.
January.....	3.6	3.6	3.60	221	+855	1,110	18.1	C.
February.....	4.0	3.6	3.66	211	+389	600	10.4	C.
March.....	4.0	3.6	3.81	234	+820	1,050	17.1	C.
April.....	46	4.0	6.67	397	+3,640	4,040	67.9	B.
May.....	225	62	191	11,700	+2,090	13,800	224	A.
June.....	366	120	241	14,300	+2,030	16,300	274	A.
July.....	410	95	158	9,720	-583	9,140	149	A.
August.....	128	110	119	7,320	-5,280	2,040	33.2	A.
September.....	121	3.6	54.5	3,240	-2,680	560	9.41	A.
The year...	410	2.5	66.6	48,200	+2,160	50,400	69.4	

Monthly discharge of Salmon Creek near Conconully—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Mean discharge without storage in second-feet.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.		
1916-17.								
October.....	23	3.6	8.38	515	+278	793	12.9	A.
November.....	36	2.8	12.5	744	-197	547	9.19	A.
December.....	2.8	2.8	2.80	172	+697	869	14.1	B.
January.....	2.8	2.8	2.80	172	+438	610	9.92	B.
February.....	2.8	2.8	2.80	156	+379	535	9.63	B.
March.....	2.8	2.8	2.80	172	+360	532	8.65	B.
April.....	3.2	2.8	2.95	176	+1,020	1,200	20.2	B.
May.....	234	3.2	29.5	1,810	+5,110	6,920	113	A.
June.....	244	118	165	9,820	+270	10,100	170	A.
July.....	149	118	139	8,550	-6,330	2,220	36.1	A.
August.....	139	112	126	7,750	-7,250	500	8.13	A.
September.....	121	1.3	30.7	1,830	-1,180	650	10.9	A.
The year....	244	1.3	44.0	31,900	-6,400	25,500	35.2	
1917-18.								
October.....	56	1.3	5.69	350	+226	576	9.37	A.
November.....	4.0	1.3	2.39	142	+476	618	10.4	B.
December.....	1.7	1.3	1.49	91.6	+617	709	11.5	B.
January.....	1.7	1.5	1.60	98.4	+544	642	10.4	B.
February.....	1.7	1.7	1.70	94.4	+376	470	8.46	B.
March.....	2.1	1.7	1.85	114	+515	629	10.2	B.
April.....	5.1	1.9	3.02	180	+906	1,090	18.3	B.
May.....	115	2.5	42.8	2,630	-504	2,130	34.6	A.
June.....	143	12	54.4	3,240	-2,040	1,200	20.2	A.
July.....	132	12	31.0	1,910	-1,640	270	4.39	A.
August.....	33	5.4	20.0	1,230	-1,070	160	2.60	A.
September.....	23	6.3	15.9	946	-580	366	6.15	A.
The year....	143	1.3	15.2	11,000	-2,170	8,860	12.2	
Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.			
	Maximum.	Minimum.	Mean.					
1918-19.								
October.....	30	2.1	10.8	664	A.			
November.....	.8	.8	.80	47.6	C.			
December.....	.8	.8	.80	49.2	C.			
January.....	1.0	1.0	1.00	61.5	C.			
February.....	1.0	.8	.81	45.0	C.			
March.....	1.5	.8	1.15	70.7	C.			
April.....	1.7	1.3	1.35	80.3	C.			
May.....	105	1.9	46.6	2,870	A.			
June.....	127	7.9	55.2	3,280	A.			
July.....	131	8.2	67.7	4,160	A.			
August.....	132	7.2	53.4	3,280	A.			
September.....	87	.8	17.4	1,040	A.			
The year....	132	.8	21.6	15,600				

NOTE.—During the year ending Sept. 30, 1919, information is not available for determining monthly storage regulation effected in Conconully and Salmon Creek reservoirs. Therefore correction for storage accumulation or release, as given in the preceding tables for the years ending Sept. 30, 1912 to 1918, is not possible. During the year ending Sept. 30, 1919, storage decreased about 40 acre-feet in Salmon Lake reservoir, and increased about 50 acre-feet in Conconully reservoir. Hence the net storage during that year increased about 10 acre-feet.

Yearly discharge of Salmon Creek near Conconully.

Year ending September 30.	Discharge in second-feet.				Annual mean.	Annual run-off in acre-feet.
	Maximum day.	Minimum.				
		Day.	Calendar month.			
			Mean.	Month.		
1904.....	577	11	13.5	Feb.....	78.9	57,300
1905.....	410	10	14.1	Feb.....	58.6	42,400
1906.....	386	5.8	7.63	Sept.....	40.5	29,300
1907.....	363	6.2	9.29	Jan.....	47.9	34,700
1908.....	214	6.2	8.17	Sept.....	34.4	25,000
1909.....	166	2.9	5.20	Jan.....	33.3	24,100
1910.....	77.7	2.9	6.27	Oct.....	29.4	21,300
1911.....	107	.0	1.18	Sept.....	20.6	15,000
1912.....	126	.8	5.44	Feb.....	27.1	19,700
1913.....	120	1.5	4.25	Sept.....	29.3	21,200
1914.....	246	1.7	1.93	Sept.....	44.1	31,900
1915.....	292	1.7	2.33	Sept.....	44.9	32,500
1916.....	410	2.5	8.78	Oct.....	69.4	50,100
1917.....	244	1.3	8.13	Aug.....	35.2	25,500
1918.....	143	1.3	2.60	Aug.....	12.2	8,860
1919.....	132	.8	.....	.....	21.6	15,600
The period.....	577	.0	1.18	Sept., 1911	39.2	28,400

METHOW RIVER BASIN.

METHOW RIVER NEAR WINTHROP (86).

Staff gage 1 mile below Winthrop and mouth of Chewack Creek, in Okanogan County.

Drainage area, 1,020 square miles; measured on Okanogan National Forest map, edition of 1918.

Monthly discharge of Methow River near Winthrop.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1912.					
January.....	276	168	204	12,500	C.
February.....	194	144	173	9,950	C.
March.....	252	144	177	10,900	C.
April.....	1,800	238	922	54,900	C.
May.....	9,250	1,670	4,250	261,000	C.
June.....	4,730	1,360	3,050	181,000	B.
July.....	1,480	510	941	57,900	B.
August.....	590	360	459	28,200	B.
September.....	510	288	364	21,700	B.
October.....	300	252	285	17,500	B.
The period.....	.....	.....	.....	656,000	.....

METHOW RIVER AT TWISP (87).

Staff gage at highway bridge at Twisp, a quarter of a mile below Twisp River, in Okanogan County.

A considerable amount of water is diverted above the station for irrigation.

Drainage area, 1,370 square miles; measured on topographic map and Okanogan National Forest map, edition of 1918.

Monthly discharge of Methow River at Twisp.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1919.					
June 13-30.....	7,210	.....	5,270	314,000	A.
July.....	4,820	1,020	2,670	164,000	A.
August.....	1,020	384	646	39,700	A.
September.....	519	343	403	24,000	A.
The period.....	.....			542,000	

NOTE.—Maximum discharge during period of record, 7,610 second-feet at 10 a. m. June 22; minimum discharge, 343 second-feet Sept. 26-30.

METHOW RIVER AT PATEROS (88).

Staff gage three-fourths mile above highway bridge at Pateros and 1 mile above mouth, in Okanogan County.

A considerable amount of water is diverted above the station for irrigation.

Drainage area, 1,850 square miles; measured on topographic and Okanogan National Forest maps.

Monthly discharge of Methow River at Pateros.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903.					
June 17-31.....	13,200	7,040	9,900	275,000	B.
July.....	6,410	1,690	3,150	194,000	B.
August.....	1,690	820	1,140	70,100	B.
September.....	1,060	685	854	50,800	B.
The period.....	.....			590,000	
1903-4.					
October.....	1,150	820	1,000	61,500	B.
November.....	1,150	785	961	57,200	B.
December.....	970	685	816	50,200	B.
January.....	685	520	606	37,300	B.
February.....	685	520	595	34,200	B.
March.....	520	475	485	29,800	B.
April.....	9,640	475	3,980	237,000	B.
May.....	11,800	4,640	6,830	420,000	B.
June.....	9,420	4,200	7,060	420,000	B.
July.....	7,510	1,380	3,610	222,000	B.
August.....	1,270	570	832	51,200	B.
September.....	625	435	509	30,300	B.
The year.....	11,800	435	2,270	1,650,000	
1904-5.					
October.....	625	435	479	29,500	B.
November.....	520	455	476	28,300	B.
December.....	498	345	451	27,700	B.
January.....	475	.....	421	25,900	B.
February.....	435	.....	347	19,300	D.
March.....	1,900	435	1,210	74,400	B.
April.....	6,140	1,270	2,500	149,000	B.
May.....	7,740	3,040	4,210	259,000	B.
June.....	11,900	5,260	8,250	491,000	B.
July.....	5,260	1,500	2,830	174,000	B.
August.....	1,380	545	847	52,100	B.
September.....	570	475	498	29,600	B.
The year.....	11,900	.....	1,880	1,360,000	

Monthly discharge of Methow River at Pateros—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905-6.					
October.....	980	570	719	44,200	B.
November.....	718	475	614	36,500	B.
December.....	520	395	454	27,900	B.
January.....	598	360	424	26,100	B.
February.....	415	330	370	20,500	B.
March.....	625	360	398	24,500	B.
April.....	4,000	655	1,920	114,000	B.
May.....	12,200	3,220	5,250	323,000	B.
June.....	9,650	3,220	4,940	294,000	A.
July.....	4,000	790	1,970	121,000	A.
August.....	758	486	592	36,400	A.
September.....	486	420	453	27,000	A.
The year.....	12,200	330	1,510	1,100,000	
1906-7.					
October.....	725	400	461	28,300	A.
November.....	1,320	584	722	43,000	A.
December.....	584	420	528	32,500	A.
January.....			343	21,100	D.
February.....			430	23,900	D.
March.....	584	534	558	34,300	A.
April.....	2,860	584	1,560	92,800	B.
May.....	12,600	2,360	7,190	442,000	A.
June.....	12,900	4,200	6,720	400,000	A.
July.....	5,040	1,480	2,760	170,000	A.
August.....	1,430	638	882	54,200	A.
September.....	665	442	602	35,800	A.
The year.....	12,900		1,900	1,380,000	
1907-8.					
October.....	638	463	531	32,600	A.
November.....	509	442	468	27,800	A.
December.....	486	380	448	27,500	A.
January.....	463	330	395	24,300	A.
February.....	509	315	411	23,600	A.
March.....	534	362	434	26,700	A.
April.....	1,920	534	1,140	67,800	A.
May.....	6,590	2,210	4,520	278,000	A.
June.....	11,600	4,000	7,250	431,000	A.
July.....	5,700	1,220	3,250	200,000	A.
August.....	1,120	638	763	46,900	A.
September.....	610	400	478	28,400	A.
The year.....	11,600	315	1,670	1,210,000	
1908-9.					
October.....	400	380	392	24,100	A.
November.....	534	400	444	26,400	A.
December.....	442	345	404	24,800	A.
January.....			317	19,500	D.
February.....			327	18,200	D.
March.....	558	345	405	24,900	A.
April.....	1,380	558	871	51,800	A.
May.....	7,740	1,220	3,250	200,000	A.
June.....	12,200	3,800	7,520	447,000	A.
July.....	6,140	1,540	3,210	197,000	A.
August.....	1,480	534	798	49,100	A.
September.....	509	380	432	25,700	A.
The year.....	12,200		1,530	1,110,000	
1909-10.					
October.....	463	400	428	26,300	A.
November.....	790	420	485	28,900	A.
December.....	945		516	31,700	B.
January.....			360	22,100	D.
February.....			361	20,000	D.
March.....	3,220	420	1,420	87,300	A.
April.....	12,200	2,060	4,590	273,000	A.
May.....	14,900	6,360	9,320	573,000	A.
June.....	9,410	4,000	6,360	378,000	A.
July.....	4,410	1,380	3,090	190,000	A.
August.....	1,320	534	889	54,700	A.
September.....	584	486	520	30,900	A.
The year.....	14,900		2,370	1,720,000	

Monthly discharge of Methow River at Pateros—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1910-11.					
October.....	1,120	486	827	50,800	A.
November.....	865	509	704	41,900	A.
December.....	610	420	519	31,900	A.
January.....	610	.....	389	23,900	B.
February.....	.....	.....	398	22,100	C.
March.....	1,170	.....	583	35,800	B.
April.....	2,520	1,030	1,440	85,700	A.
May.....	6,140	2,690	3,660	225,000	A.
June.....	13,200	4,110	7,320	436,000	A.
July.....	3,940	1,020	2,210	136,000	A.
August.....	1,120	448	728	44,800	A.
September.....	810	448	654	38,900	A.
The year.....	13,200	.....	1,620	1,170,000	
1911-12.					
October.....	530	401	439	27,000	A.
November.....	448	294	396	23,600	A.
December.....	401	.....	338	20,800	B.
January.....	.....	.....	318	19,600	C.
February.....	.....	.....	309	17,800	B.
March.....	401	294	318	19,600	A.
April.....	1,540	401	960	57,100	A.
May.....	10,100	1,430	4,780	294,000	A.
June.....	6,620	2,400	4,980	296,000	A.
July.....	2,540	770	1,590	97,800	A.
August.....	935	530	675	41,500	A.
September.....	625	424	526	31,300	A.
The year.....	10,100	.....	1,300	946,000	
1912-13.					
October.....	474	401	424	26,100	A.
November.....	448	401	420	25,000	A.
December.....	401	.....	363	22,300	B.
January.....	.....	.....	305	18,800	C.
February.....	.....	.....	324	18,000	C.
March.....	.....	326	350	21,500	B.
April.....	2,140	361	1,100	65,500	A.
May.....	8,980	1,380	4,260	262,000	A.
June.....	11,000	5,020	7,400	440,000	A.
July.....	4,650	1,220	2,480	152,000	A.
August.....	1,170	448	764	47,000	A.
September.....	810	401	505	30,000	A.
The year.....	11,000	.....	1,560	1,130,000	
1913-14.					
October.....	448	381	425	26,100	A.
November.....	448	381	419	24,900	A.
December.....	448	294	364	22,400	A.
January.....	381	252	353	21,700	A.
February.....	560	310	378	21,000	B.
March.....	625	326	419	25,800	A.
April.....	3,440	625	2,360	140,000	A.
May.....	8,980	2,970	6,230	383,000	A.
June.....	9,860	3,940	5,690	339,000	A.
July.....	5,210	850	2,470	152,000	A.
August.....	850	401	559	34,400	A.
September.....	770	361	492	29,300	A.
The year.....	9,860	252	1,680	1,220,000	
1914-15.					
October.....	830	560	671	41,300	A.
November.....	990	755	828	49,300	A.
December.....	755	.....	492	30,300	B.
January.....	.....	.....	403	24,800	C.
February.....	.....	.....	394	21,900	C.
March.....	830	360	503	30,900	A.
April.....	4,900	870	2,550	152,000	A.
May.....	4,900	2,500	3,580	220,000	A.
June.....	4,700	1,540	2,790	166,000	B.
July.....	1,750	750	1,150	70,700	B.
August.....	997	456	621	38,200	A.
September.....	437	372	416	24,800	A.
The year.....	4,900	.....	1,200	870,000	

Monthly discharge of Methow River at Pateros—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	448	372	406	25,000	A.
November.....	486	400	450	26,800	A.
December.....	506	386	439	27,000	A.
January.....			394	24,200	C.
February.....			422	24,300	C.
March.....	870		636	39,100	B.
April.....	4,880	910	2,770	165,000	A.
May.....	9,540	3,940	6,120	376,000	A.
June.....	14,200	5,910	9,260	551,000	A.
July.....	8,820	2,290	5,520	339,000	A.
August.....	2,290	870	1,490	91,600	A.
September.....	992	506	686	40,800	A.
The year.....	14,200		2,380	1,730,000	
1916-17.					
October.....	552	486	512	31,500	A.
November.....	529	446	495	29,500	A.
December.....	578		453	27,900	B.
January.....			399	24,500	C.
February.....			379	21,000	C.
March.....			387	23,800	B.
April.....	506	376	454	27,000	A.
May.....	9,780	486	3,580	220,000	A.
June.....	9,780	4,880	6,560	390,000	A.
July.....	5,910	1,120	3,050	188,000	A.
August.....	1,080	486	723	44,500	A.
September.....	486	392	432	25,700	A.
The year.....	9,780		1,460	1,050,000	
1917-18.					
October.....	413	381	399	24,500	A.
November.....	430	413	422	25,100	A.
December.....	735		426	26,200	B.
January.....	960		578	35,500	B.
February.....	559		383	21,300	B.
March.....	535		437	26,900	B.
April.....	3,920	586	1,610	95,800	A.
May.....	6,620	2,510	4,360	268,000	A.
June.....	9,420	2,430	5,320	317,000	A.
July.....	2,300	768	1,510	92,800	A.
August.....	768	406	576	35,400	A.
September.....	386	280	310	18,400	A.
The year.....	9,420		1,360	987,000	
1918-19.					
October.....	474	295	398	24,500	A.
November.....	450	366	415	24,700	A.
December.....			410	25,200	B.
January.....	498		361	22,200	C.
February.....			302	16,800	C.
March.....	578		356	21,900	B.
April.....	4,350	665	2,190	130,000	A.
May.....	9,510	2,860	5,060	311,000	A.
June.....	7,540	3,860	5,470	325,000	A.
July.....	4,200		2,680	165,000	C.
August.....		472	756	46,500	B.
September.....		449	492	29,300	B.
The year.....	9,510		1,580	1,140,000	

NOTE.—Maximum discharge during period of record, 14,900 second-feet May 11, 1910; minimum discharge estimated at 204 second-feet Jan. 5-6, 1919, when stage-discharge relation was affected by ice.

Yearly discharge of Methow River at Pateros.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1904.....	11,800	435	485	Mar.....	2,270	1,650,000
1905.....	11,900	.....	347	Feb.....	1,880	1,360,000
1906.....	12,200	330	370	Feb.....	1,510	1,100,000
1907.....	12,900	.....	343	Jan.....	1,900	1,380,000
1908.....	11,600	315	395	Jan.....	1,670	1,210,000
1909.....	12,200	.....	317	Jan.....	1,530	1,110,000
1910.....	14,900	.....	360	Jan.....	2,370	1,720,000
1911.....	13,200	.....	389	Jan.....	1,620	1,170,000
1912.....	10,100	.....	309	Feb.....	1,300	946,000
1913.....	11,000	.....	305	Jan.....	1,560	1,130,000
1914.....	9,860	252	353	Jan.....	1,680	1,220,000
1915.....	4,900	.....	394	Feb.....	1,200	870,000
1916.....	14,200	.....	394	Jan.....	2,380	1,730,000
1917.....	9,780	.....	379	Feb.....	1,460	1,050,000
1918.....	9,420	.....	310	Sept.....	1,360	987,000
1919.....	9,510	.....	302	Feb.....	1,580	1,140,000
The period.....	14,900	.....	302	Feb., 1919.	1,700	1,240,000

CHEWACK CREEK AT WINTHROP (89).

Staff gage at county bridge at Winthrop, a quarter of a mile above mouth of creek, in Okanogan County.

A considerable amount of water is diverted above the station for irrigation.

Drainage area, 544 square miles (revised); measured on Okanogan National Forest map, edition of 1918.

Monthly discharge of Chewack Creek at Winthrop.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1912.					
April 4-30.....	208	37	136	7,280	B.
May.....	2,300	187	1,080	66,400	B.
June.....	1,480	377	931	55,400	B.
July.....	505	136	286	17,600	B.
August.....	236	90	131	8,060	B.
September.....	208	90	126	7,500	B.
The period.....	.....	.....	.....	162,000	
1912-13.					
October.....	98	82	94.1	5,790	B.
November 1-10.....	98	98	98.0	1,940	B.
March 15-31.....	82	68	73.8	2,490	B.
April.....	301	82	230	13,700	B.
May.....	2,480	252	986	60,600	B.
June.....	2,840	905	1,620	96,400	B.
July.....	970	195	430	26,400	B.
August.....	195	82	137	8,420	B.
September.....	236	68	111	6,600	B.

CHELAN RIVER BASIN.

STEHEKIN RIVER AT STEHEKIN (90).

Staff gage prior to August 19, 1911, at pipe-line trestle at Hotel Field, at Stehekin; beginning that date a quarter of a mile below Boulder Creek, 1 mile above Stehekin, and 1¼ miles above mouth of river, in Chelan County.

Drainage area, 368 square miles at upper site, measured on topographic and Chelan National Forest maps.

Monthly discharge of Stehekin River at Stehekin.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910-11.							
October.....			1,900	5.16	5.95	117,000	D.
November.....			1,100	2.99	3.34	65,500	D.
December.....		320	650	1.77	2.04	40,000	C.
January.....	450	230	320	.870	1.00	19,700	C.
February.....	320	320	320	.870	.91	17,800	C.
March.....	1,840	150	718	1.95	2.25	44,100	B.
April.....	4,360	1,070	1,890	5.14	5.74	112,000	B.
May.....	8,380	2,880	4,190	11.4	13.14	258,000	B.
June.....	11,400	2,790	5,650	15.4	17.18	336,000	B.
July.....	5,190	1,620	3,030	8.23	9.49	186,000	B.
August.....	1,760	840	1,250	3.40	3.92	76,900	B.
September.....	1,370	398	889	2.42	2.70	52,900	A.
The year.....	11,400	150	1,830	4.97	67.66	1,330,000	
1911-12.							
October.....	352	272	303	.823	.95	18,600	A.
November.....	500	175	311	.845	.84	18,500	A.
December.....	352	235	295	.802	.92	18,100	A.
January.....	235	189	214	.582	.67	13,200	A.
February.....	235	203	217	.590	.64	12,500	A.
March.....	620	189	263	.715	.82	16,200	A.
April.....	1,550	620	1,180	3.21	3.58	70,200	A.
May.....	6,860	1,550	3,700	10.1	11.64	228,000	A.
June.....	6,860	2,240	4,580	12.4	13.83	273,000	A.
July.....	2,480	1,280	1,880	5.11	5.89	116,000	A.
August.....	1,830	620	1,130	3.07	3.54	69,500	A.
September.....	690	344	533	1.45	1.62	31,700	A.
The year.....	6,860	175	1,220	3.32	45.04	886,000	
1912-13.							
October.....	398	265	303	.823	.95	18,600	A.
November.....	352	242	292	.793	.88	17,400	A.
December.....	352	229	254	.690	.80	15,600	A.
January.....	242	209	228	.620	.71	14,000	A.
February.....	448	219	305	.829	.86	16,900	A.
March.....	448	310	357	.970	1.12	22,000	A.
April.....	2,740	510	1,760	4.78	5.33	105,000	B.
May.....	6,420	2,260	3,820	10.4	11.99	235,000	B.
June.....	4,320	3,650	4,020	10.9	12.16	239,000	B.
July.....	3,820	2,610	3,230	8.78	10.12	199,000	A.
August.....	3,020	760	1,530	4.16	4.80	94,100	A.
September.....	3,020	474	877	2.38	2.66	52,200	A.
The year.....	6,420	209	1,420	3.84	52.38	1,030,000	
1913-14.							
October.....	1,460	291	627	1.70	1.96	38,600	A.
November.....	880	352	434	1.18	1.32	25,800	A.
December.....	398	219	283	.769	.89	17,400	A.
January.....	800	189	381	1.04	1.20	23,400	A.
February.....	291	203	238	.647	.67	13,200	A.
March.....	1,100	235	596	1.62	1.87	36,600	A.
April.....	3,020	620	1,910	5.19	5.79	114,000	A.
May.....	5,620	2,480	3,550	9.65	11.12	218,000	A.
June.....	6,230	2,030	3,630	9.86	11.00	216,000	A.
July.....	5,020	1,400	2,590	7.04	8.12	159,000	A.
August.....	1,600	782	1,190	3.23	3.72	73,200	A.
September.....	1,220	398	636	1.73	1.93	37,800	A.
The year.....	6,230	189	1,340	3.64	49.59	973,000	

Monthly discharge of Stehekin River at Stehekin—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1914-15.							
October.....	1,010	370	589	1.60	1.84	36,200	A.
November.....	1,400	675	946	2.57	2.87	56,300	A.
December.....	782	.....	456	1.24	1.43	28,000	C.
January.....	311	.....	226	.614	.71	13,900	B.
February.....	204	.....	190	.516	.54	10,600	B.
March.....	1,050	194	499	1.36	1.57	30,700	A.
April.....	3,040	1,220	2,140	5.82	6.49	127,000	A.
May.....	3,320	1,400	1,890	5.14	5.93	116,000	A.
June.....	2,640	1,310	1,680	4.57	5.10	100,000	A.
July.....	2,030	858	1,270	3.45	3.98	78,100	A.
August.....	1,600	1,050	1,240	3.37	3.88	76,200	A.
September.....	1,050	311	492	1.34	1.50	29,300	A.
The year.....	3,320	.....	971	2.64	35.84	702,000	
1915.							
October.....	970	221	433	1.18	1.36	26,600	A.

NOTE.—Maximum discharge during period of record, 11,400 second-feet June 12, 1911; minimum discharge estimated at 150 second-feet Mar. 10, 1911. Discharge October, November, and Dec. 1-6, 1910, estimated by comparison with record for Chelan River at Chelan.

Yearly discharge of Stehekin River at Stehekin.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maxi- mum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
			Mean.					Month.
1911.....	11,400	150	320	Jan., Feb..	1,830	4.97	67.66	1,330,000
1912.....	6,860	175	214	Jan.....	1,220	3.32	45.04	886,000
1913.....	6,420	209	228	Jan.....	1,420	3.84	52.38	1,030,000
1914.....	6,230	189	238	Feb.....	1,340	3.64	49.59	973,000
1915.....	3,320	.....	190	Feb.....	971	2.64	35.84	702,000
The period.	11,400	150	190	Feb., 1915.	1,360	3.68	50.10	984,000

CHELAN RIVER AT CHELAN (91).

Staff gage at lower highway bridge at Chelan, 800 feet below flashboard dam at outlet of Lake Chelan, in Chelan County.

Several irrigation ditches divert from tributaries a very small proportion of the run-off. The dam at the outlet controls lake level at low water in the interest of navigation. Monthly mean discharge has been corrected for natural and artificial storage in Lake Chelan.

Drainage area, 950 square miles; measured on topographic and Forest Service maps.

Monthly discharge of Chelan River at Chelan.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge without storage in second-feet.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1903-4.										
October.....						74,100	1,210	1.27	1.46	
November.....		1,440	1,710	102,000	-21,500	80,500	1,350	1.42	1.58	B.
December.....	1,680	1,060	1,280	78,700	-17,700	61,000	992	1.04	1.20	B.
January.....	1,060	830	935	57,500	-12,200	45,300	737	.776	.89	B.
February.....	1,060	555	904	52,000	-9,900	42,100	732	.771	.83	B.
March.....	1,440	830	1,050	64,600	-20,600	44,000	716	.754	.87	B.
April.....	5,580	1,060	2,730	162,000	+176,000	338,000	5,680	5.98	6.67	B.
May.....	7,600	4,620	5,730	352,000	+88,000	440,000	7,160	7.54	8.69	B.
June.....	8,280	6,920	7,620	453,000	-48,000	405,000	6,810	7.17	8.00	B.
July.....	8,280	4,140	6,520	401,000	-36,000	365,000	5,940	6.25	7.21	B.
August.....	4,460	765	3,060	188,000	-69,000	119,000	1,940	2.04	2.35	B.
September.....	1,810	765	1,330	79,100	-29,100	50,000	840	.884	.99	B.
The year.....	8,280	555			0	2,060,000	2,840	2.99	40.74	
1904-5.										
October.....	1,060	765	910	56,000	-21,800	34,200	556	.585	.67	B.
November.....	900	765	807	48,000	-10,800	37,200	625	.658	.73	B.
December.....	830	765	785	48,300	-11,600	36,700	597	.628	.72	B.
January.....	765	705	742	45,600	-4,500	41,100	668	.703	.81	B.
February.....	830	705	757	42,000	-14,000	28,000	504	.531	.55	B.
March.....	2,490	765	1,900	117,000	+13,000	130,000	2,110	2.22	2.56	A.
April.....	3,670	1,940	2,330	139,000	+28,000	167,000	2,810	2.96	3.30	A.
May.....	4,940	3,370	3,870	238,000	+22,000	260,000	4,230	4.45	5.13	A.
June.....	8,280	5,420	7,160	426,000	+37,000	463,000	7,780	8.19	9.14	A.
July.....	6,410	4,140	5,080	312,000	-11,000	301,000	4,900	5.16	5.95	A.
August.....	3,980	975	2,190	135,000	-6,000	129,000	2,100	2.21	2.55	A.
September.....	1,440	1,060	1,300	77,400	-20,300	57,100	960	1.01	1.13	A.
The year.....	8,280	705	2,330	1,680,000	0	1,680,000	2,330	2.45	33.24	
1905-6.										
October.....	2,350	1,330	1,760	108,000	-25,500	82,500	1,340	1.41	1.63	A.
November.....	1,560	900	1,160	69,000	-21,900	47,100	792	.834	.93	A.
December.....	900	765	816	50,200	-18,300	31,900	519	.546	.63	A.
January.....	1,140	765	854	52,500	-17,500	35,000	569	.599	.69	A.
February.....	975	900	913	50,700	-15,100	35,600	641	.675	.70	A.
March.....	1,940	900	1,220	75,000	-31,300	43,700	711	.748	.86	A.
April.....	3,370	1,060	2,080	124,000	+80,000	204,000	3,430	3.61	4.03	A.
May.....	5,100	3,670	4,580	282,000	+76,000	358,000	5,820	6.13	7.07	A.
June.....	4,780	3,070	4,120	245,000	+42,000	287,000	4,820	5.07	5.66	A.
July.....	4,780	2,920	4,020	247,000	-35,000	212,000	3,450	3.63	4.18	A.
August.....	2,770	1,230	1,740	107,000	-14,000	93,000	1,510	1.59	1.83	A.
September.....	1,440	1,060	1,200	71,400	-19,400	52,000	874	.920	1.03	A.
The year.....	5,100	765	2,050	1,480,000	0	1,480,000	2,050	2.16	29.24	
1906-7.										
October.....	1,140	765	911	56,000	-2,000	54,000	878	.924	1.07	A.
November.....	3,520	765	1,930	118,000	+12,000	130,000	2,180	2.29	2.56	A.
December.....	2,770	975	1,870	115,000	-69,200	45,800	745	.784	.90	A.
January.....	900	600	746	45,900	-18,300	27,600	449	.473	.54	A.
February.....	1,140	650	841	46,700	-2,500	44,200	796	.838	.87	A.
March.....	1,140	975	1,060	65,200	-11,800	53,400	868	.914	1.05	A.
April.....	2,490	900	1,600	95,200	+48,800	144,000	2,420	2.55	2.84	A.
May.....	7,770	2,770	5,340	328,000	+143,000	471,000	7,660	8.06	9.29	A.
June.....	8,460	5,580	6,840	407,000	-17,000	390,000	6,550	6.89	7.69	A.
July.....	6,410	3,980	4,990	307,000	-45,000	262,000	4,260	4.48	5.16	A.
August.....	3,820	1,140	2,270	140,000	-25,000	115,000	1,870	1.97	2.27	A.
September.....	1,230	1,140	1,190	70,800	-13,000	57,800	971	1.02	1.14	A.
The year.....	8,460	600	2,480	1,790,000	0	1,790,000	2,480	2.61	35.38	

Monthly discharge of Chelan River at Chelan—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge without storage in second-feet.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1907-8.										
October.....	1,140	830	975	60,000	-24,700	35,300	574	0.604	0.70	A.
November.....	765	418	579	34,500	-400	34,100	573	.603	.67	A.
December.....	480	364	395	24,300	+11,600	35,900	584	.615	.71	A.
January.....	555	448	502	30,900	+3,109	34,000	553	.582	.67	A.
February.....	480	418	456	26,200	+1,900	28,100	489	.515	.56	A.
March.....	3,370	448	1,580	97,200	-44,500	52,700	857	.902	1.04	A.
April.....	3,070	1,440	1,890	112,000	+10,000	122,000	2,050	2.16	2.41	A.
May.....	4,940	2,770	3,860	237,000	+53,000	290,000	4,720	4.97	5.73	A.
June.....	8,820	4,940	6,790	404,000	+26,000	430,000	7,230	7.61	8.49	A.
July.....	6,920	4,940	6,340	390,000	+16,000	406,000	6,600	6.95	8.01	A.
August.....	4,780	1,440	2,390	147,000	-27,000	120,000	1,950	2.05	2.36	A.
September.....	1,440	900	1,180	70,200	-25,000	45,200	760	.800	.89	A.
The year.....	8,820	364	2,250	1,630,000	0	1,630,000	2,250	2.37	32.24	
1908-9.										
October.....	830	418	677	41,600	-16,500	25,100	403	.429	.49	A.
November.....	1,060	418	641	38,100	+3,000	41,100	691	.727	.81	A.
December.....	900	555	717	44,100	-20,200	23,900	389	.409	.47	A.
January.....	650	480	542	33,300	-11,100	22,200	361	.380	.44	A.
February.....	600	515	560	31,100	-11,600	19,500	351	.369	.38	A.
March.....	2,630	480	1,210	74,400	-42,700	31,700	516	.543	.63	A.
April.....	2,490	600	1,500	89,300	-2,900	86,400	1,450	1.53	1.71	A.
May.....	4,940	1,940	2,760	170,000	+63,000	233,000	3,790	3.99	4.60	A.
June.....	7,600	5,260	6,880	409,000	+53,000	462,000	7,760	8.17	9.12	A.
July.....	6,070	3,520	4,980	306,000	-4,000	302,000	4,910	5.17	5.96	A.
August.....	3,370	418	1,420	87,300	+16,700	104,000	1,690	1.78	2.05	A.
September.....	1,330	900	1,150	68,400	-26,700	41,700	701	.738	.82	A.
The year.....	7,600	418	1,920	1,390,000	0	1,390,000	1,920	2.02	27.48	
1909-10.										
October.....	900	600	755	46,400	-15,700	30,700	499	.525	.61	A.
November.....	2,210	600	915	54,400	+41,000	95,400	1,600	1.68	1.87	A.
December.....	2,490	900	1,740	107,000	-36,600	70,400	1,140	1.20	1.38	A.
January.....	975	650	760	46,700	-9,700	37,000	602	.634	.73	A.
February.....	705	515	620	34,400	-6,000	28,400	511	.538	.56	A.
March.....	3,980	830	2,390	147,000	-25,000	122,000	1,980	2.08	2.40	A.
April.....	4,300	2,490	3,030	180,000	+107,000	287,000	4,820	5.07	5.66	A.
May.....	8,460	4,780	7,430	457,000	+56,000	513,000	8,340	8.78	10.12	A.
June.....	7,940	5,260	6,770	403,000	-81,000	322,000	5,410	5.69	6.35	A.
July.....	5,740	3,980	5,060	311,000	-39,000	272,000	4,420	4.65	5.36	A.
August.....	3,670	480	1,740	107,000	+10,000	117,000	1,900	2.00	2.31	A.
September.....	900	555	762	45,300	-1,000	44,300	744	.783	.87	A.
The year.....	8,460	480	2,680	1,940,000	0	1,940,000	2,680	2.82	38.22	
1910-11.										
October.....	3,670	900	2,850	175,000	-31,000	144,000	2,340	2.46	2.84	A.
November.....	2,210	1,680	1,910	114,000	-10,000	104,000	1,750	1.84	2.05	A.
December.....	1,810	364	871	53,600	-7,500	46,100	750	.789	.91	A.
January.....	418	317	362	22,300	+15,000	37,300	607	.639	.74	A.
February.....	418	364	389	21,600	+3,500	25,100	452	.476	.50	A.
March.....	2,490	364	727	44,700	+7,500	52,200	849	.894	1.03	A.
April.....	2,630	1,940	2,260	134,000	-6,000	128,000	2,150	2.26	2.52	A.
May.....	4,940	2,490	3,360	207,000	+97,000	304,000	4,940	5.20	6.00	A.
June.....	7,260	5,100	6,300	375,000	-21,000	354,000	5,950	6.26	6.98	A.
July.....	5,580	2,490	4,080	251,000	-33,000	218,000	3,550	3.74	4.31	A.
August.....	2,630	830	2,060	127,000	-14,000	113,000	1,840	1.94	2.24	A.
September.....	1,230	765	996	59,300	0	59,300	997	1.05	1.17	A.
The year.....	7,260	317	2,190	1,580,000	+500	1,580,000	2,190	2.31	31.29	

Monthly discharge of Chelan River at Chelan—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge without storage in second-feet.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1911-12.										
October.....	1,060	390	618	38,000	-15,000	23,000	374	0.394	0.45	A.
November.....	448	340	402	23,900	+6,900	30,800	518	.545	.61	A.
December.....	515	390	464	28,500	-3,700	24,800	403	.424	.49	A.
January.....	515	390	437	26,900	-500	26,400	429	.452	.52	A.
February.....	515	448	486	28,000	+300	28,300	492	.518	.56	A.
March.....	480	418	454	27,900	0	27,900	454	.478	.55	A.
April.....	2,770	480	1,940	115,000	0	115,000	1,930	2.03	2.26	A.
May.....	6,580	2,490	4,800	295,000	+56,000	351,000	5,710	6.01	6.93	A.
June.....	7,260	5,900	6,230	371,000	+9,000	380,000	6,390	6.73	7.51	A.
July.....	7,260	900	4,320	266,000	-60,000	206,000	3,350	3.53	4.07	A.
August.....	1,680	975	1,370	84,200	+2,500	86,700	1,410	1.48	1.71	A.
September.....	1,230	555	848	50,500	-12,300	38,200	642	.676	.75	A.
The year.....	7,260	340	1,870	1,350,000	-16,800	1,340,000	1,840	1.94	26.41	
1912-13.										
October.....	555	418	477	29,300	-6,000	23,300	379	.399	.46	A.
November.....	480	418	453	27,000	0	27,000	454	.478	.53	A.
December.....	480	418	432	26,600	+1,500	28,100	457	.481	.55	A.
January.....	480	418	460	28,300	-1,500	26,800	436	.459	.53	A.
February.....	515	418	477	26,500	-3,000	23,500	423	.445	.46	B.
March.....	2,070	390	1,120	68,900	-40,500	28,400	462	.486	.56	A.
April.....	2,180	833	1,370	81,500	+29,500	111,000	1,870	1.97	2.20	A.
May.....	6,480	2,050	3,510	216,000	+98,000	314,000	5,110	5.38	6.20	A.
June.....	9,070	6,820	7,960	474,000	0	474,000	7,970	8.39	9.36	A.
July.....	6,820	4,250	5,360	330,000	-44,000	286,000	4,650	4.89	5.64	B.
August.....	4,060	1,020	2,170	133,000	-11,000	122,000	1,980	2.08	2.40	A.
September.....	1,800	833	1,310	78,000	-7,500	70,500	1,180	1.24	1.38	A.
The year.....	9,070	390	2,100	1,520,000	+15,500	1,530,000	2,120	2.23	30.27	
1913-14.										
October.....	868	598	715	44,000	-3,000	41,000	667	.702	.81	B.
November.....	800	598	678	40,300	+1,000	41,300	694	.731	.82	B.
December.....	678	424	530	32,600	-11,700	20,900	340	.358	.41	A.
January.....	800	454	677	41,600	+8,700	50,300	818	.861	.99	A.
February.....	706	463	544	30,200	-3,300	26,900	484	.509	.53	A.
March.....	2,990	484	1,340	82,400	-27,700	54,700	890	.937	1.08	A.
April.....	3,280	1,920	2,670	159,000	+33,000	192,000	3,230	3.40	3.79	A.
May.....	6,820	3,280	5,140	316,000	+49,000	365,000	5,940	6.25	7.21	A.
June.....	6,650	4,860	5,730	341,000	-20,000	321,000	5,390	5.67	6.33	B.
July.....	5,500	2,850	4,520	278,000	-40,000	238,000	3,870	4.07	4.69	B.
August.....	2,850	484	1,280	78,700	+7,500	86,200	1,400	1.47	1.70	B.
September.....	800	550	706	42,000	+6,500	48,500	815	.858	.96	A.
The year.....	6,820	424	2,050	1,490,000	0	1,490,000	2,050	2.16	29.32	
1914-15.										
October.....	920	673	783	48,100	+6,000	54,100	880	.926	1.07	A.
November.....	1,470	1,040	1,250	74,400	+5,000	79,400	1,330	1.40	1.56	A.
December.....	1,210	602	903	55,500	-11,000	44,500	724	.762	.88	A.
January.....	648	418	535	32,900	-8,000	24,900	405	.426	.49	A.
February.....	482	403	423	23,500	-8,000	15,500	279	.294	.31	A.
March.....	1,310	433	579	35,600	+23,500	59,100	961	1.01	1.16	A.
April.....	3,900	1,360	3,410	203,000	-11,000	192,000	3,230	3.40	3.79	A.
May.....	3,740	2,990	3,330	205,000	-5,000	200,000	3,250	3.42	3.94	A.
June.....	3,130	2,330	2,630	156,000	+5,000	161,000	2,710	2.85	3.18	A.
July.....	2,460	1,210	1,900	117,000	-2,000	115,000	1,870	1.97	2.27	A.
August.....	1,820	1,260	1,520	93,500	-8,800	84,700	1,380	1.45	1.67	A.
September.....	1,580	418	601	35,800	-3,200	32,600	548	.577	.64	A.
The year.....	3,900	403	1,490	1,080,000	-17,600	1,060,000	1,470	1.55	20.96	

Monthly discharge of Chelan River at Chelan—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge without storage in second-feet.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1915-16.										
October.....	466	349	388	23,900	+ 6,000	29,900	486	0.512	0.59	B.
November.....	673	482	560	33,300	+ 4,500	37,800	635	.668	.75	B.
December.....	727	465	607	37,300	- 1,400	35,900	584	.615	.71	A.
January.....	624	303	500	30,700	-15,500	15,200	247	.260	.30	B.
February.....	538	465	513	29,500	+ 6,500	36,000	626	.659	.71	A.
March.....	2,990	500	1,960	121,000	-20,000	101,000	1,640	1.73	1.99	A.
April.....	3,200	2,070	2,610	155,000	+31,000	186,000	3,130	3.29	3.67	A.
May.....	5,560	3,280	4,900	301,000	+45,000	346,000	5,630	5.93	6.84	A.
June.....	9,780	5,180	7,580	451,000	+67,000	518,000	8,710	9.17	10.23	A.
July.....	8,880	5,340	7,480	460,000	-71,000	389,000	6,330	6.66	7.68	B.
August.....	5,340	1,580	3,530	217,000	-29,000	188,000	3,060	3.22	3.71	A.
September.....	1,940	571	1,390	82,700	-17,000	65,700	1,100	1.16	1.29	A.
The year.....	9,780	303	2,680	1,940,000	+ 6,100	1,950,000	2,680	2.82	38.47	
1916-17.										
October.....	870	370	541	33,300	- 8,000	25,300	411	.438	.50	B.
November.....	392	330	347	20,600	+ 1,500	22,100	371	.391	.44	A.
December.....	370	330	345	21,200	- 1,500	19,700	320	.337	.39	B.
January.....	370	.....	297	18,300	- 1,500	16,800	273	.287	.33	B.
February.....	415	370	398	22,100	- 4,500	17,600	317	.334	.35	A.
March.....	1,940	392	996	61,200	-42,300	18,900	307	.323	.37	A.
April.....	905	370	559	33,300	+26,800	60,100	1,010	1.06	1.18	A.
May.....	6,590	565	3,340	205,000	+97,000	302,000	4,910	5.17	5.96	A.
June.....	7,440	6,250	6,810	405,000	- 1,000	404,000	6,790	7.15	7.98	B.
July.....	7,100	4,380	6,260	385,000	-40,000	345,000	5,610	5.91	6.81	A.
August.....	4,150	1,020	2,040	125,000	- 1,000	124,000	2,020	2.13	2.46	A.
September.....	1,480	940	1,180	70,200	-12,500	57,700	970	1.02	1.14	B.
The year.....	7,440	.....	1,940	1,400,000	+13,000	1,410,000	1,950	2.05	27.91	
1917-18.										
October.....	940	495	756	46,500	-17,000	29,500	480	.505	.58	A.
November.....	565	465	495	29,500	+ 6,500	36,000	605	.637	.71	B.
December.....	2,500	530	817	50,200	+46,500	96,700	1,570	1.65	1.90	B.
January.....	5,570	1,700	3,410	210,000	-66,000	144,000	2,340	.246	2.84	A.
February.....	1,700	565	1,120	62,200	-13,100	49,100	884	.931	.97	A.
March.....	1,380	330	874	53,700	-11,900	41,800	680	.716	.83	A.
April.....	2,800	1,280	1,720	102,000	+36,000	138,000	2,320	2.44	2.72	B.
May.....	4,930	3,100	4,270	263,000	+56,000	319,000	5,190	5.46	6.30	B.
June.....	8,140	4,150	6,590	392,000	+ 8,000	400,000	6,720	7.07	7.89	B.
July.....	6,520	2,880	4,700	289,000	-42,000	247,000	4,020	4.23	4.88	B.
August.....	3,180	845	1,660	102,000	+ 2,000	104,000	1,690	1.78	2.05	A.
September.....	1,150	980	1,070	63,700	0	63,700	1,070	1.13	1.26	A.
The year.....	8,140	330	2,300	1,660,000	+ 5,000	1,670,000	2,300	2.42	32.93	
1918-19.										
October.....	1,340	845	1,020	62,700	- 6,500	56,200	914	.962	1.11	A.
November.....	910	630	781	46,500	- 9,000	37,500	630	.663	.74	B.
December.....	1,240	662	932	57,300	+ 9,600	66,900	1,090	1.15	1.33	B.
January.....	1,150	678	866	53,200	+ 2,400	55,600	904	.952	1.10	A.
February.....	980	630	769	42,700	-10,500	32,200	580	.611	.64	A.
March.....	730	547	615	37,800	+ 3,300	41,100	668	.703	.81	A.
April.....	3,810	730	2,070	123,000	+26,200	149,000	2,500	2.63	2.93	A.
May.....	7,600	3,970	4,900	301,000	+41,500	342,000	5,560	5.85	6.74	A.
June.....	7,270	5,410	6,410	381,000	+ 4,300	385,000	6,470	6.81	7.60	A.
July.....	6,930	4,150	6,060	373,000	-41,900	331,000	5,380	5.66	6.52	A.
August.....	3,400	1,740	2,380	146,000	-22,900	123,000	2,000	2.11	2.43	A.
September.....	1,850	730	1,260	75,000	-18,000	57,000	958	1.01	1.13	B.
The year.....	7,600	547	2,350	1,700,000	-21,500	1,680,000	2,320	2.44	33.08	

NOTE.—Maximum discharge during period of record, 9,780 second-feet June 20, 1916; practically no flow for a part of Jan. 30, 1917, when outlet was blocked with ice. Discharge without storage estimated October, 1903, to December, 1904, and July, 1905, to November, 1910, when a gage-height record for Lake Chelan is not available, by comparison of discharge without storage, for remainder of period, with records at gaging stations on Wenatchee and Methow rivers.

Yearly discharge of Chelan River at Chelan.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean. ^a	Month.				
1904.....	8,280	555	716	Mar.....	2,840	2.99	40.74	2,060,000
1905.....	8,280	705	504	Feb.....	2,330	2.45	33.24	1,680,000
1906.....	5,100	765	519	Dec.....	2,050	2.16	29.24	1,480,000
1907.....	8,460	600	449	Jan.....	2,480	2.61	35.38	1,790,000
1908.....	8,820	364	489	Feb.....	2,250	2.37	32.24	1,630,000
1909.....	7,600	418	351	Feb.....	1,920	2.02	27.48	1,390,000
1910.....	8,460	480	499	Oct.....	2,680	2.82	38.22	1,940,000
1911.....	7,260	317	452	Feb.....	2,190	2.31	31.29	1,580,000
1912.....	7,260	340	374	Oct.....	1,840	1.94	26.41	1,340,000
1913.....	9,070	390	379	Oct.....	2,120	2.23	30.27	1,530,000
1914.....	6,820	424	340	Dec.....	2,050	2.16	29.32	1,490,000
1915.....	3,900	403	279	Feb.....	1,470	1.55	20.96	1,060,000
1916.....	9,780	303	247	Jan.....	2,680	2.82	38.47	1,950,000
1917.....	7,440	.....	273	Jan.....	1,950	2.05	27.91	1,410,000
1918.....	8,140	330	480	Oct.....	2,300	2.42	32.93	1,670,000
1919.....	7,600	547	580	Feb.....	2,320	2.44	33.08	1,680,000
The period.....	9,780	.....	247	Jan., 1916	2,220	2.33	31.70	1,600,000

^a Corrected for storage.

RAILROAD CREEK AT LUCERNE (92).

Staff gage at trail bridge at Lucerne, just above the mouth, in Chelan County.
Drainage area, 64 square miles; measured on topographic map.

Monthly discharge of Railroad Creek at Lucerne.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910-11.							
Dec. 7-31.....	118	68	87.6	1.37	1.27	4,340	
January.....	81	57	63.9	.998	1.15	3,930	A.
February.....	57	40	47.8	.747	.78	2,650	A.
March.....	188	40	74.6	1.17	1.35	4,590	A.
April.....	325	146	198	3.09	3.45	11,800	B.
May.....	630	295	346	5.41	6.24	21,300	B.
June.....	900	427	608	9.50	10.60	36,200	B.
July.....	467	325	400	6.25	7.21	24,600	B.
August.....	357	188	240	3.75	4.32	14,800	B.
September.....	265	68	146	2.28	2.54	8,690	A.
The period.....	.....	.....	.....	.....	.....	133,000	
1911-12.							
October.....	81	40	52.5	.820	.95	3,230	A.
November.....	146	36	62.6	.978	1.09	3,720	A.
December.....	62	36	41.9	.655	.76	2,580	A.
January.....	44	27	37.6	.588	.68	2,310	A.
February.....	36	22	31.9	.498	.54	1,830	A.
March.....	68	22	34.7	.542	.62	2,130	A.
April.....	212	81	145	2.27	2.53	8,630	A.
May.....	900	238	445	6.95	8.01	27,400	C.
June.....	806	353	595	9.30	10.38	35,400	C.
July.....	408	236	339	5.30	6.11	20,800	C.
August.....	300	150	211	3.30	3.80	13,000	C.
September.....	112	61	86.3	1.35	1.51	5,140	C.
The year.....	900	22	174	2.72	36.98	126,000	

Monthly discharge of Railroad Creek at Lucerne—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1912-13.							
October.....	57	31	44.0	0.688	0.79	2,710	C.
November.....	42	31	35.4	.553	.62	2,110	C.
December.....	38	22	28.4	.444	.51	1,750	C.
January.....	25	15	16.7	.261	.30	1,030	C.
February.....	55	18	33.4	.522	.54	1,850	C.
March.....	42	26	37.9	.592	.68	2,330	C.
April.....	283	34	148	2.31	2.58	8,810	C.
May.....	717	222	424	6.62	7.63	26,100	C.
June.....	806	507	659	10.3	11.49	39,200	C.
The period.....						85,900	

ENTIAT RIVER BASIN.

ENTIAT RIVER AT ENTIAT (93).

Staff gage one-eighth mile below power plant of Wenatchee Valley Gas & Electric Co., three-fourths mile west of Entiat, and 1 mile above mouth of river, in Chelan County.

There are several diversions above the station for irrigation. The Entiat Irrigation Co.'s high-line canal (capacity about 15 second-feet) carries water past the station. Monthly summaries show estimated diversion and depletion on account of irrigation. Flow is affected by changes in load at power plant.

Drainage area, 419 square miles; measured on topographic maps.

Monthly discharge of Entiat River at Entiat.

Month.	Discharge in second-feet.						Run-off.		Accu- racy of ob- served data.
	Observed.			Esti- mated diver- sion and deple- tion on account of irri- gation.	Esti- mated natural mean- flow.	Per square mile.	Inches.	Acre-feet.	
	Maxi- mum.	Mini- mum.	Mean.						
1910-11.									
October.....			250	6	256	0.611	0.70	15,700	D.
November.....	515	228	288		288	.687	.77	17,100	B.
December.....	285	150	213		213	.508	.59	13,100	C.
January.....			112		112	.267	.31	6,890	C.
February.....			112		112	.267	.28	6,220	C.
March.....	450	112	228		228	.544	.63	14,000	B.
April.....	950	335	533	4	537	1.28	1.43	32,000	B.
May.....	1,640	850	1,070	11	1,080	2.58	2.97	66,400	B.
June.....	3,060	950	1,860	14	1,870	4.46	4.93	111,000	B.
July.....	950	285	586	15	601	1.43	1.65	37,000	B.
August.....	285	150	207	15	222	.530	.61	13,600	B.
September.....	245	150	193	12	205	.489	.55	12,200	B.
The year.....	3,060		471		478	1.14	15.47	345,000	

Monthly discharge of Entiat River at Entiat—Continued.

Month.	Discharge in second-feet.						Run-off.		Accu- racy of ob- served data.
	Observed.			Esti- mated diver- sion and deple- tion on account of irri- gation.	Esti- mated natural mean flow.	Per square mile.	Inches.	Acre-feet.	
	Maxi- mum.	Mini- mum.	Mean.						
1911-12.									
October.....	150	112	125	6	131	0.313	0.36	8,060	
November.....	228	90	135	.....	135	.322	.36	8,030	B.
December.....	150	80	118	.....	118	.282	.33	7,260	B.
January.....	150	.....	118	.....	118	.282	.33	7,260	B.
February.....	150	70	116	.....	116	.277	.30	6,670	C.
March.....	245	92	137	.....	137	.327	.38	8,420	B.
April.....	590	265	391	4	395	.943	1.05	23,500	B.
May.....	3,060	515	1,710	11	1,720	4.11	4.74	106,000	B.
June.....	2,380	950	1,760	14	1,770	4.22	4.71	105,000	B.
July.....	850	265	501	15	516	1.23	1.42	31,700	B.
August.....	335	165	227	15	242	.578	.67	14,900	B.
September.....	195	105	146	12	158	.377	.42	9,400	B.
The year.....	3,060	70	457	.....	463	1.11	15.07	336,000	
1912-13.									
October.....	138	100	119	6	125	.298	.34	7,690	B.
November.....	138	112	128	.....	128	.305	.34	7,620	B.
December.....	165	102	125	.....	125	.298	.34	7,690	B.
January.....	.....	.....	108	.....	108	.258	.30	6,640	C.
February.....	.....	.....	136	.....	136	.325	.34	7,550	C.
March.....	180	112	149	.....	149	.356	.41	9,160	B.
April.....	715	150	409	4	413	.986	1.10	24,600	B.
May.....	3,060	450	1,450	11	1,460	3.48	4.01	89,800	B.
June.....	3,800	1,720	2,680	14	2,690	6.42	7.16	160,000	B.
July.....	1,860	491	1,040	15	1,060	2.53	2.92	65,200	B.
August.....	491	186	301	15	316	.754	.87	19,400	B.
September.....	256	143	186	12	198	.473	.53	11,800	B.
The year.....	3,800	.....	569	.....	576	1.37	18.66	417,000	
1913-14.									
October.....	171	134	155	6	161	.384	.44	9,900	B.
November.....	185	134	161	.....	161	.384	.43	9,580	B.
December.....	158	119	140	.....	140	.334	.39	8,610	B.
January.....	231	119	171	.....	171	.408	.47	10,500	B.
February.....	171	65	136	.....	136	.325	.34	7,550	B.
March.....	360	156	233	.....	233	.556	.64	14,300	B.
April.....	1,060	250	725	4	729	1.74	1.94	43,400	B.
May.....	2,700	870	1,770	11	1,780	4.25	4.90	109,000	B.
June.....	2,870	1,010	1,580	14	1,590	3.79	4.23	9,460	B.
July.....	1,390	311	736	15	751	1.79	2.06	46,200	B.
August.....	311	134	196	15	211	.504	.58	13,000	B.
September.....	199	123	146	12	158	.377	.42	9,400	B.
The year.....	2,870	65	514	.....	520	1.24	16.84	376,000	
1914-15.									
October.....	199	146	167	6	173	.413	.48	10,600	B.
November.....	268	205	239	.....	239	.570	.64	14,200	B.
December.....	250	.....	161	.....	161	.384	.44	9,900	D.
January.....	151	.....	127	.....	127	.303	.35	7,810	D.
February.....	124	104	111	.....	111	.265	.28	6,160	B.
March.....	311	112	179	.....	179	.427	.49	11,000	B.
April.....	1,510	250	840	4	844	2.01	2.24	50,200	B.
May.....	1,510	780	980	11	991	2.37	2.73	60,900	B.
June.....	1,110	360	704	14	718	1.71	1.91	42,700	B.
July.....	545	179	275	15	290	.692	.80	17,800	B.
August.....	246	124	168	15	183	.437	.50	11,300	B.
September.....	142	83	98.0	12	110	.263	.29	6,550	B.
The year.....	1,510	83	338	.....	344	.821	11.15	249,000	

Monthly discharge of Entiat River at Entiat—Continued.

Month.	Discharge in second-feet.						Run-off.		Accu- racy of ob- served data.
	Observed.			Esti- mated diver- sion and deple- tion on account of irri- gation.	Esti- mated natural mean flow.	Per square mile.	Inches.	Acrc-feet.	
	Maxi- mum.	Mini- mum.	Mean.						
1915-16.									
October.....	171	83	98.4	6	104	0.248	0.29	6,400	B.
November.....	199	73	114	.....	114	.272	.30	6,780	B.
December.....	124	.....	98.7	.....	98.7	.236	.27	6,070	C.
January.....	.....	.....	91.8	.....	91.8	.219	.25	5,640	C.
February.....	164	.....	116	.....	116	.277	.30	6,670	C.
March.....	620	137	367	.....	367	.876	1.01	22,600	B.
April.....	1,330	415	853	4	857	2.05	2.29	51,000	B.
May.....	2,700	1,110	1,830	11	1,840	4.39	5.06	113,000	B.
June.....	5,150	2,060	3,160	14	3,170	7.57	8.45	189,000	B.
July.....	3,240	1,000	2,090	15	2,100	5.01	5.78	129,000	B.
August.....	1,000	388	609	15	624	1.49	1.72	38,400	B.
September.....	388	169	226	12	238	.568	.63	14,200	B.
The year.....	5,150	73	804	.....	811	1.94	26.35	589,000	
1916-17.									
October.....	190	142	163	6	169	.403	.46	10,400	B.
November.....	159	62	124	.....	124	.296	.33	7,200	B.
December.....	.....	.....	107	.....	107	.255	.29	6,580	C.
January.....	.....	.....	107	.....	107	.255	.29	6,580	C.
February.....	.....	.....	112	.....	112	.267	.28	6,220	B.
March.....	123	90	105	.....	105	.251	.29	6,460	B.
April.....	299	92	195	4	199	.475	.53	11,800	B.
May.....	3,120	222	1,190	11	1,200	2.86	3.30	73,800	B.
June.....	2,950	1,680	2,220	14	2,230	5.32	5.94	133,000	B.
July.....	2,290	473	1,230	15	1,240	2.96	3.41	76,200	B.
August.....	446	222	323	15	338	.807	.93	20,800	B.
September.....	228	142	182	12	194	.463	.52	11,500	B.
The year.....	3,120	62	506	.....	511	1.22	16.57	371,000	
1917-18.									
October.....	155	100	127	6	133	.317	.37	8,180	B.
November.....	148	95	121	.....	121	.289	.32	7,200	B.
December.....	.....	.....	230	.....	230	.549	.63	14,100	C.
January.....	1,290	.....	497	.....	497	1.19	1.37	30,600	B.
February.....	267	.....	193	.....	193	.461	.48	10,700	C.
March.....	224	126	145	.....	145	.346	.40	8,920	B.
April.....	990	276	524	4	528	1.26	1.41	31,400	B.
May.....	2,130	990	1,380	11	1,390	3.32	3.83	85,500	B.
June.....	3,120	938	1,780	14	1,790	4.27	4.76	107,000	B.
July.....	893	289	527	15	542	1.29	1.49	33,300	A.
August.....	289	141	203	15	218	.520	.60	13,400	A.
September.....	146	109	122	12	134	.320	.36	7,970	A.
The year.....	3,120	.....	488	.....	494	1.18	16.02	358,000	
1918-19.									
October.....	583	114	170	6	176	.420	.48	10,800	A.
November.....	138	64	119	.....	119	.284	.32	7,080	A.
December.....	355	.....	150	.....	150	.358	.41	9,220	A.
January.....	229	.....	147	.....	147	.351	.40	9,040	C.
February.....	149	.....	121	.....	121	.289	.30	6,720	A.
March.....	355	104	152	.....	152	.363	.42	9,350	A.
April.....	984	332	458	4	462	1.10	1.23	27,500	A.
May.....	2,950	728	1,380	11	1,390	3.32	3.83	85,500	A.
June.....	2,780	1,350	1,890	14	1,900	4.53	5.05	113,000	A.
July.....	1,680	518	1,100	15	1,120	2.67	3.08	68,900	A.
August.....	550	193	328	15	343	.819	.94	21,100	A.
September.....	200	127	165	12	177	.422	.47	10,500	A.
The year.....	2,950	64	517	.....	524	1.25	16.93	379,000	

NOTE.—Maximum discharge during period of record, 5,150 second-feet June 17, 1916; minimum discharge, 62 second-feet Nov. 13, 1916. Flow past gage in canal estimated from two discharge measurements and high-water mark in canal. Distribution by months made on basis of six-year record of Wenatchee Reclamation District canal at Dryden. Depletion above gage based on careful studies of irrigation in Yakima basin. (See Water-Supply Paper 369, pp. 50-55.) Total depletion assumed to be 2.8 feet an acre. Basin is small and return flow probably reaches river in short time. Depletion is therefore distributed by months in same proportion as estimated diversions. Mean discharge for October, 1910, based on actual record Oct. 5-9 and hydrographic comparison with Wenatchee and Methow rivers.

Yearly discharge of Entiat River at Entiat.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1911.....	3,060	.....	112	Jan., Feb..	478	1.14	15.47	345,000
1912.....	3,060	70	116	Feb.....	463	1.11	15.07	336,000
1913.....	3,800	.....	108	Jan.....	576	1.37	18.66	417,000
1914.....	2,870	65	136	Feb.....	520	1.24	16.84	376,000
1915.....	1,510	83	110	Sept.....	344	.821	11.15	249,000
1916.....	5,150	73	91.8	Jan.....	811	1.94	26.35	589,000
1917.....	3,120	62	105	Mar.....	511	1.22	16.57	371,000
1918.....	3,120	.....	121	Nov.....	494	1.18	16.02	358,000
1919.....	2,950	64	119	Nov.....	524	1.25	16.93	379,000
The period.	5,150	.....	91.8	Jan., 1916..	525	1.25	17.01	380,000

WENATCHEE RIVER BASIN.

LITTLE WENATCHEE RIVER NEAR CHIWAUKUM (94).

Staff gage three-fourths mile above Wenatchee Lake and 11 miles northwest of Chiwaukum, in Chelan County.

Drainage area, 99 square miles; measured on topographic maps.

Monthly discharge of Little Wenatchee River near Chiwaukum.

Month.	Discharge in second-feet.		Run-off.		Accu- racy.
	Mean.	Per square mile.	Inches.	Acre-feet.	
1911.					
August.....	80	0.81	0.93	4,920	D.
September.....	110	1.11	1.24	6,550	D.
October.....	67	.68	.78	4,120	D.
The period.....				15,600	

NOTE.—Discharge for August and September computed from fragmentary gage-height record by interpolation and by comparison with records at gaging stations on nearby streams. Discharge for October estimated by comparison with records of Wenatchee River near Leavenworth, White River, and Chiwawa River.

WENATCHEE RIVER NEAR LEAVENWORTH (95).

Staff gage 1,500 feet below highway bridge at Plain, half a mile below Beaver Creek, and 14 miles north of Leavenworth, in Chelan County.

The Wenatchee Park Land & Irrigation Co. has diverted a maximum of about 12 second-feet from Chiwawa River since the irrigation season of 1914. Flow regulated by natural storage in Lake Wenatchee.

Drainage area, 591 square miles; measured on topographic maps.

Monthly discharge of Wenatchee River near Leavenworth.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910-11.							
October.....			2,000	3.38	3.90	123,000	C.
November.....			3,000	5.08	5.67	179,000	C.
December.....	2,080	970	1,240	2.10	2.42	76,200	B.
January.....	1,140	708	876	1.48	1.71	53,900	B.
February.....	756	468	591	1.00	1.04	32,800	B.
March.....	2,080	468	950	1.61	1.86	58,400	B.
April.....	4,530	1,810	2,540	4.30	4.80	151,000	B.
May.....	7,200	3,070	4,210	7.12	8.21	259,000	A.
June.....	10,400	3,560	6,220	10.5	11.71	370,000	A.
July.....	3,740		2,720	4.60	5.30	167,000	A.
August.....	1,430	714	951	1.61	1.86	58,500	A.
September.....	1,210	476	756	1.28	1.43	45,000	A.
The year.....	10,400	468	2,170	3.67	49.91	1,570,000	
1911-12.							
October.....	476	340	400	.67	.78	24,600	A.
November.....	4,300	335	1,310	2.22	2.48	78,000	A.
December.....	1,380	630	890	1.51	1.74	54,700	A.
January.....	1,050		732	1.24	1.43	45,000	B.
February.....	900	672	785	1.33	1.43	45,200	A.
March.....	1,260	513	662	1.12	1.29	40,700	A.
April.....	3,230	1,430	2,330	3.94	4.40	139,000	A.
May.....	11,500	3,230	6,760	11.4	13.14	416,000	A.
June.....	8,760	4,110	6,690	11.3	12.61	398,000	A.
July.....	4,710	1,380	2,600	4.40	5.07	160,000	A.
August.....	1,550	714	1,070	1.81	2.09	65,800	A.
September.....	950	442	602	1.02	1.14	35,800	A.
The year.....	11,500	335	2,070	3.50	47.60	1,500,000	
1912-13.							
October.....	590	402	483	.817	.94	29,700	A.
November.....	1,050	476	733	1.24	1.38	43,600	A.
December.....	1,000	550	698	1.18	1.36	42,900	A.
January.....	852		621	1.05	1.21	38,200	B.
February.....	1,320		809	1.37	1.43	44,900	B.
March.....	900	735	815	1.38	1.59	50,100	B.
April.....	4,160	772	2,140	3.62	4.04	127,000	B.
May.....	10,100	2,380	5,990	10.1	11.64	368,000	B.
June.....	14,300	6,710	9,570	16.2	18.07	569,000	A.
July.....	7,970	2,760	5,260	8.90	10.26	323,000	A.
August.....	3,070	1,050	1,700	2.88	3.32	105,000	A.
September.....	2,760	714	1,130	1.91	2.13	67,200	A.
The year.....	14,300	402	2,500	4.23	57.37	1,810,000	
1913-14.							
October.....	1,920	590	1,240	2.10	2.42	76,200	A.
November.....	2,140	852	1,290	2.18	2.43	76,800	A.
December.....	1,290	599	830	1.40	1.61	51,000	A.
January.....	2,140	591	1,160	1.96	2.26	71,300	A.
February.....	930	575	666	1.13	1.18	37,000	A.
March.....	2,540	817	1,510	2.55	2.94	92,800	A.
April.....	5,700	1,350	3,410	5.77	6.44	203,000	B.
May.....	8,560	3,510	5,920	10.0	11.53	364,000	B.
June.....	7,760	2,970	4,560	7.72	8.61	271,000	A.
July.....	4,700	1,370	2,760	4.67	5.38	170,000	A.
August.....	1,400	700	981	1.66	1.91	60,300	A.
September.....	1,080	482	710	1.20	1.34	42,200	A.
The year.....	8,560	482	2,090	3.54	48.05	1,520,000	
1914-15.							
October.....	1,520	575	949	1.61	1.86	58,400	A.
November.....	3,610	1,520	2,230	3.77	4.21	133,000	A.
December.....	1,640	615	893	1.51	1.74	54,900	A.
January.....	658		491	.831	.96	30,200	C.
February.....	460	393	431	.729	.76	23,900	B.
March.....	2,010	426	1,030	1.74	2.01	63,300	A.
April.....	6,020	2,140	3,630	6.14	6.85	216,000	A.
May.....	3,960	2,140	2,610	4.42	5.10	160,000	A.
June.....	2,970	1,130	1,860	3.15	3.51	111,000	A.
July.....	1,640	745	1,060	1.79	2.06	65,200	A.
August.....	930	658	764	1.29	1.49	47,000	A.
September.....	575	316	402	.680	.76	23,900	A.
The year.....	6,020	316	1,360	2.30	31.31	987,000	

Monthly discharge of Wenatchee River near Leavenworth—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1915-16.							
October.....	1,630	316	618	1.05	1.21	38,000	A.
November.....	2,260	515	940	1.59	1.77	55,900	A.
December.....	748	515	589	.997	1.15	36,200	A.
January.....	.....	.....	547	.928	1.07	33,700	C.
February.....	925	.....	738	1.25	1.35	42,400	C.
March.....	2,680	790	1,660	2.81	3.24	102,000	A.
April.....	4,700	1,630	3,090	5.23	5.84	184,000	A.
May.....	9,680	3,960	6,160	10.40	11.99	379,000	A.
June.....	16,400	5,540	9,370	15.90	17.74	558,000	A.
July.....	9,120	3,440	6,440	10.90	12.57	396,000	A.
August.....	3,960	1,630	2,590	4.38	5.05	159,000	A.
September.....	1,750	625	981	1.66	1.85	58,400	A.
The year.....	16,400	316	2,810	4.75	64.83	2,040,000	
1916-17.							
October.....	580	418	485	.821	.95	29,800	A.
November.....	1,030	438	557	.942	1.05	33,100	A.
December.....	470	.....	408	.690	.80	25,100	A.
January.....	540	357	429	.726	.84	26,400	B.
February.....	700	.....	604	1.02	1.06	33,500	A.
March.....	580	438	487	.824	.95	29,900	A.
April.....	1,660	438	913	1.54	1.72	54,300	A.
May.....	11,000	1,790	5,210	8.82	10.17	320,000	A.
June.....	11,000	5,550	8,030	13.6	15.17	478,000	A.
July.....	9,570	2,610	6,150	10.4	11.99	378,000	A.
August.....	2,610	1,030	1,740	2.94	3.39	107,000	A.
September.....	980	580	754	1.28	1.43	44,900	A.
The year.....	11,000	.....	2,150	3.64	49.52	1,560,000	.....
1917-18.							
October.....	745	405	517	.875	1.00	31,800	A.
November.....	1,140	412	678	1.15	1.28	40,300	A.
December.....	18,700	505	3,640	6.16	7.10	224,000	A.
January.....	15,400	1,300	3,940	6.67	7.69	242,000	A.
February.....	1,660	930	1,250	2.12	2.21	69,400	A.
March.....	1,790	745	976	1.65	1.90	60,000	A.
April.....	5,110	1,660	2,880	4.87	5.43	171,000	A.
May.....	7,710	2,760	4,810	8.14	9.38	296,000	A.
June.....	11,000	3,920	6,720	11.4	12.72	400,000	A.
July.....	4,300	1,540	2,770	4.69	5.41	170,000	A.
August.....	1,660	790	1,070	1.81	2.09	65,800	A.
September.....	835	505	647	1.09	1.22	38,500	A.
The year.....	18,700	405	2,500	4.23	57.43	1,810,000	
1918-19.							
October.....	2,050	540	937	1.59	1.83	57,600	A.
November.....	1,420	745	998	1.69	1.89	59,400	A.
December.....	5,110	745	1,970	3.33	3.84	121,000	A.
January.....	1,920	745	1,140	1.93	2.22	70,100	A.
February.....	1,080	700	868	1.47	1.53	48,200	A.
March.....	1,660	620	792	1.34	1.54	48,700	A.
April.....	6,230	1,920	3,000	5.08	5.67	179,000	A.
May.....	11,500	3,560	6,010	10.2	11.76	370,000	A.
June.....	9,030	4,690	6,470	10.9	12.16	385,000	A.
July.....	7,200	2,760	4,990	8.44	9.73	307,000	A.
August.....	2,760	980	1,700	2.88	3.32	105,000	A.
September.....	1,030	540	759	1.28	1.43	45,200	A.
The year.....	11,500	540	2,480	4.20	56.92	1,800,000	

NOTE.—Maximum discharge during period of record, 18,700 second-feet Dec. 30, 1917; minimum discharge, 316 second-feet Sept. 29-30 and Oct. 11-12, 1915. Mean discharge for October and November, 1910, estimated by percentage comparison with record of Wenatchee River at Cashmere and Dryden. Percentage used for each month was average for that month in the period of record.

Yearly discharge of Wenatchee River near Leavenworth.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maxi- mum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1911.....	10,400	468	591	Feb.....	2,170	3.67	49.91	1,570,000
1912.....	11,500	335	400	Oct.....	2,070	3.50	47.60	1,500,000
1913.....	14,300	402	483	Oct.....	2,500	4.23	57.37	1,810,000
1914.....	8,560	482	666	Feb.....	2,090	3.54	48.05	1,520,000
1915.....	6,020	316	402	Sept.....	1,360	2.30	31.31	987,000
1916.....	16,400	316	547	Jan.....	2,810	4.75	64.83	2,040,000
1917.....	11,000	.....	408	Dec.....	2,150	3.64	49.52	1,560,000
1918.....	18,700	405	517	Oct.....	2,500	4.23	57.43	1,810,000
1919.....	11,500	540	759	Sept.....	2,480	4.20	56.92	1,800,000
The period.	18,700	316	400	Oct., 1911..	2,340	3.78	51.44	1,620,000

WENATCHEE RIVER AT CASHMERE AND DRYDEN (96).

Staff gage prior to October 13, 1909, at highway bridge in Cashmere, half a mile below Mission Creek, 8 miles above mouth; October 13, 1909, to September 30, 1911, at highway bridge half a mile above Mission Creek; thereafter at Wenatchee Valley Gas & Electric Co.'s power plant a quarter of a mile north of Dryden, 1 mile below intake of Wenatchee Reclamation District canal, and 4 miles above Cashmere, in Chelan County.

There are many diversions for irrigation above the station. The Wenatchee Reclamation District canal is the most important. Depletion caused by irrigation above the station is estimated and added to record of flow in river and canal to give probable natural run-off. Flow is regulated slightly at mill pond at Leavenworth.

Drainage area, 1,280 square miles (revised), to October 12, 1909; 1,200 square miles thereafter; measured on topographic maps.

Monthly discharge of Wenatchee River at Cashmere and Dryden.

Month.	Discharge in second-feet.							Run-off.		Accu- racy.
	Maxi- mum. ^a	Mini- mum. ^a	Mean.		Esti- mated deple- tion.	Esti- mated natural flow.	Per square mile.	Inches.	Acre-feet.	
			River.	Canal. ^b						
1904.										
July 27-31.....	4,260	3,180	3,780	60	26	3,870	3.02	0.56	38,400	C.
August.....	3,180	1,280	2,080	60	24	2,160	1.69	1.95	133,000	B.
September.....	1,480	830	1,080	40	17	1,140	.891	.99	67,800	B.
The period.....									239,000	
1904-5.										
October.....	1,280	730	855	20	10	885	.691	.80	54,400	B.
November.....	1,940	690	1,100	.....	.....	1,100	.859	.96	65,500	B.
December.....	1,590	1,030	1,300	.....	.....	1,300	1.02	1.18	79,900	B.
January.....	1,110	730	900	.....	.....	900	.703	.81	53,300	B.
February.....	1,700	650	990	.....	.....	990	.773	.80	55,000	B.
March.....	6,040	1,820	4,370	.....	.....	4,370	3.41	3.93	269,000	B.
April.....	11,400	2,210	4,710	10	11	4,730	3.70	4.13	281,000	B.
May.....	11,600	4,740	6,550	40	24	6,610	5.16	5.95	406,000	B.
June.....	14,900	6,900	10,500	50	26	10,600	8.28	9.24	631,000	C.
July.....	7,200	2,500	4,450	70	27	4,550	3.55	4.09	280,000	B.
August.....	2,350	1,030	1,560	70	25	1,660	1.30	1.50	102,000	B.
September.....	1,820	890	1,090	40	18	1,150	.898	1.00	68,400	B.
The year.....	14,900	650	3,210	.....	.....	3,240	2.53	34.39	2,350,000	

^a Maximum and minimum determinations prior to 1911-12 refer to flow at river gaging station. During and after that year they refer to combined flow of river and canal.

^b Estimated monthly mean discharge of canal prior to June, 1911, used only to obtain natural run-off. Considerable error in estimate of discharge of canal makes small percentage error in total flow.

Monthly discharge of Wenatchee River at Cashmere and Dryden—Continued.

Month.	Discharge in second-feet.						Run-off.		Accu- racy.	
	Maxi- mum.	Mini- mum.	Mean.		Esti- mated deple- tion.	Esti- mated natural flow.	Per square mile.	Inches.		Acre-feet.
			River.	Canal.						
1905-6.										
October.....	8,760	1,190	2,950	30	11	2,990	2.34	2.70	184,000	B.
November.....	1,940	1,190	1,400	.....	.....	1,400	1.09	1.22	83,300	B.
December.....	1,280	780	965	.....	.....	965	.754	.87	59,300	B.
January.....	1,700	780	1,040	.....	.....	1,040	.812	.94	64,000	B.
February.....	1,940	1,190	1,520	.....	.....	1,520	1.19	1.24	84,400	B.
March.....	3,180	1,190	1,450	.....	.....	1,450	1.13	1.30	89,200	B.
April.....	9,960	3,000	5,860	10	13	5,880	4.59	5.12	350,000	B.
May.....	11,600	4,740	7,860	50	27	7,940	6.20	7.15	488,000	B.
June.....	8,760	3,800	5,390	50	29	5,470	4.27	4.76	325,000	B.
July.....	6,320	1,590	3,260	70	30	3,360	2.62	3.02	207,000	B.
August.....	1,480	890	1,160	70	28	1,260	.984	1.13	77,500	B.
September.....	1,700	830	1,000	50	19	1,070	.836	.93	63,700	B.
The year.....	11,600	780	2,830	.....	.....	2,870	2.24	30.38	2,080,000	
1906-7.										
October.....	12,400	830	2,420	30	12	2,460	1.92	2.21	151,000	B.
November.....	.....	.....	^c 7,100	.....	.....	7,100	5.55	6.19	422,000	
December.....	.....	.....	^c 2,200	.....	.....	2,200	1.72	1.98	135,000	
January.....	1,380	890	1,040	.....	.....	1,040	.812	.94	64,000	B.
February.....	4,260	960	2,420	.....	.....	2,420	1.89	1.97	134,000	B.
March.....	2,660	1,280	2,040	.....	.....	2,040	1.59	1.83	125,000	B.
April.....	7,500	1,820	4,670	10	13	4,690	3.66	4.08	279,000	B.
May.....	18,500	6,320	12,500	50	28	12,600	9.84	11.34	775,000	C.
June.....	19,000	5,500	9,500	60	30	9,590	7.49	8.36	571,000	C.
July.....	6,600	2,500	4,330	80	32	4,440	3.47	4.00	273,000	B.
August.....	2,660	1,110	1,560	80	29	1,670	1.30	1.50	103,000	B.
September.....	1,700	890	1,220	50	21	1,290	1.01	1.13	76,800	B.
The year.....	.....	830	4,250	.....	.....	4,300	3.36	45.53	3,110,000	
1907-8.										
October.....	1,110	1,110	1,110	30	13	1,150	.898	1.04	70,700	C.
November.....	2,500	1,120	1,300	.....	.....	1,300	1.02	1.14	77,400	C.
December.....	2,350	1,190	1,730	.....	.....	1,730	1.35	1.56	106,000	C.
January.....	1,700	960	1,390	.....	.....	1,390	1.09	1.26	85,500	B.
February.....	1,480	890	1,210	.....	.....	1,210	.945	1.02	69,600	B.
March.....	3,580	1,380	2,380	.....	.....	2,380	1.86	2.14	146,000	C.
April.....	8,760	2,070	4,560	20	14	4,590	3.59	4.00	273,000	C.
May.....	9,780	5,760	8,050	50	30	8,130	6.35	7.32	500,000	C.
June.....	.....	6,320	11,500	60	32	11,600	9.06	10.11	690,000	C.
July.....	13,200	3,800	9,590	90	33	9,710	7.59	8.75	597,000	C.
August.....	3,800	.....	2,060	90	31	2,180	1.70	1.96	134,000	C.
September.....	.....	.....	^d 970	60	22	1,050	.820	.91	62,500	
The year.....	.....	.....	3,830	.....	.....	3,870	3.02	41.21	2,810,000	
1908-9.										
October.....	.....	.....	^d 780	40	14	834	.652	.75	51,300	
November.....	.....	.....	^c 1,100	.....	.....	1,100	.859	.96	65,500	
December.....	.....	.....	^c 920	.....	.....	920	.719	.83	56,600	
January.....	.....	.....	^c 800	.....	.....	800	.625	.72	49,200	
February.....	.....	.....	^c 770	.....	.....	770	.602	.63	42,800	
March.....	.....	.....	^c 1,100	.....	.....	1,100	.859	.99	67,600	
April.....	.....	.....	^d 3,100	20	16	3,140	2.45	2.73	187,000	
May.....	11,600	4,380	7,420	60	34	7,510	5.87	6.77	462,000	B.
June.....	21,400	7,800	13,600	70	36	13,700	10.7	11.94	815,000	B.
July.....	9,440	2,660	5,510	90	38	5,640	4.41	5.08	347,000	B.
August.....	1,940	1,030	1,510	100	35	1,640	1.28	1.48	101,000	B.
September.....	1,380	730	930	60	25	1,020	.797	.89	60,700	B.
The year.....	21,400	.....	3,130	.....	.....	3,180	2.48	33.77	2,310,000	

^c Estimated by comparison with record of Yakima River at Cle Elum and at Umtanum; should be used with caution.

^d Estimated by comparison with record of Yakima River at Cle Elum; should be used with caution.

Monthly discharge of Wenatchee River at Cashmere and Dryden—Continued.

Month.	Discharge in second-feet.							Run-off.		Accu- racy.
	Maxi- mum.	Mini- mum.	Mean.		Esti- mated deple- tion.	Esti- mated natural flow.	Per square mile.	Inches.	Acre-feet.	
			River.	Canal.						
1909-10.										
October.....	1,480	870	1,070	40	15	1,120	0.910	1.05	68,900	B.
November.....	20,900	1,020	5,260	.....	.....	5,260	4.38	4.89	313,000	A.
December.....	17,200	1,720	4,050	.....	.....	4,050	3.38	3.90	249,000	A.
January.....	2,680	1,220	1,630	.....	.....	1,630	1.36	1.57	100,000	A.
February.....	1,650	1,060	1,420	.....	.....	1,420	1.18	1.23	78,900	A.
March.....	10,400	1,650	4,550	.....	.....	4,550	3.79	4.37	280,000	A.
April.....	18,900	2,600	7,100	20	15	7,140	5.95	6.64	425,000	A.
May.....	18,500	7,920	12,600	60	31	12,700	10.6	12.22	781,000	A.
June.....	11,800	5,120	7,650	80	34	7,760	6.47	7.22	462,000	A.
July.....	6,680	2,720	4,770	100	35	4,900	4.08	4.70	301,000	A.
August.....	2,630	965	1,770	100	33	1,900	1.58	1.82	117,000	A.
September.....	1,060	670	875	70	23	968	.807	.90	57,600	A.
The year.....	20,900	670	4,410	.....	.....	4,470	3.72	50.51	3,230,000	
1910-11.										
October.....	4,900	710	2,980	40	14	3,030	2.52	2.90	186,000	A.
November.....	12,600	1,920	4,160	.....	.....	4,160	3.47	3.87	248,000	A.
December.....	3,070	1,390	1,860	.....	.....	1,860	1.55	1.79	114,000	A.
January.....	2,300	1,010	1,340	.....	.....	1,340	1.12	1.29	82,400	A.
February.....	1,100	670	900	.....	.....	900	.750	.78	50,000	A.
March.....	3,160	670	1,540	.....	.....	1,540	1.28	1.48	94,700	A.
April.....	6,100	2,140	3,470	20	17	3,510	2.92	3.26	209,000	A.
May.....	10,000	3,890	5,600	70	37	5,710	4.76	5.49	351,000	A.
June.....	15,500	5,320	9,490	95	40	9,620	8.02	8.95	572,000	A.
July.....	5,080	1,470	3,580	107	42	3,730	3.11	3.58	229,000	A.
August.....	1,870	1,020	1,340	112	38	1,490	1.24	1.43	91,600	A.
September.....	1,870	760	1,160	70.8	27	1,260	1.05	1.17	75,000	A.
The year.....	15,500	670	3,120	.....	.....	3,180	2.65	35.99	2,300,000	
1911-12.										
October.....	808	628	644	48.0	17	709	.591	.68	43,600	A.
November.....	5,950	580	1,740	.0	.....	1,740	1.45	1.62	104,000	A.
December.....	1,610	880	1,250	.0	.....	1,250	1.04	1.20	76,900	A.
January.....	1,610	710	1,000	.0	.....	1,000	.833	.96	61,500	A.
February.....	1,400	880	1,080	.0	.....	1,080	.900	.97	62,100	A.
March.....	2,110	760	1,040	.0	.....	1,040	.867	1.00	64,000	A.
April.....	4,420	2,250	3,250	29.8	23	3,300	2.75	3.07	196,000	A.
May.....	18,000	4,210	9,720	68.7	49	9,840	8.20	9.45	605,000	A.
June.....	14,500	5,580	10,000	93.0	53	10,100	8.42	9.39	601,000	A.
July.....	6,540	1,720	3,370	106	56	3,530	2.94	3.39	217,000	A.
August.....	1,970	939	1,270	118	51	1,440	1.20	1.38	88,500	B.
September.....	1,230	654	784	89.9	36	910	.758	.85	54,100	A.
The year.....	18,000	580	2,930	46.3	.....	2,990	2.49	33.96	2,170,000	
1912-13.										
October.....	954	654	687	45.3	23	755	.629	.73	46,400	A.
November.....	1,610	710	1,050	.0	.....	1,050	.875	.98	62,500	A.
December.....	1,400	820	1,000	.0	.....	1,000	.833	.96	61,500	A.
January.....	1,300	760	981	.0	.....	981	.818	.94	60,300	B.
February.....	2,110	880	1,280	.0	.....	1,280	1.07	1.11	71,100	B.
March.....	1,850	1,200	1,380	.0	.....	1,380	1.15	1.33	84,800	A.
April.....	7,080	1,290	3,950	.0	24	3,970	3.31	3.69	236,000	A.
May.....	15,700	3,730	9,010	.0	50	9,060	7.55	8.70	557,000	A.
June.....	20,700	9,830	13,800	108	54	14,000	11.7	13.05	833,000	A.
July.....	10,900	3,730	7,530	116	56	7,700	6.42	7.40	473,000	A.
August.....	5,320	1,240	2,190	118	52	2,360	1.97	2.27	145,000	A.
September.....	3,920	808	1,430	120	37	1,590	1.32	1.47	94,600	A.
The year.....	20,700	654	3,700	42.5	.....	3,760	3.13	42.63	2,730,000	

Monthly discharge of Wenatchee River at Cashmere and Dryden—Continued.

Month.	Discharge in second-feet.							Run-off.		Accu- racy.
	Maxi- mum.	Mini- mum.	Mean.		Esti- mated deple- tion.	Esti- mated natural flow.	Per square mile.	Inches.	Acre-feet.	
			River.	Canal.						
1913-14.										
October.....	2,960	863	1,570	68.8	23	1,660	1.38	1.59	102,000	A.
November.....	3,070	959	1,710	11.3	.....	1,720	1.43	1.60	102,000	A.
December.....	1,850	835	1,200	.0	.....	1,200	1.00	1.15	73,800	A.
January.....	3,610	900	1,790	.0	.....	1,790	1.49	1.72	110,000	A.
February.....	1,490	900	1,040	.0	.....	1,040	.867	.90	57,800	A.
March.....	3,610	1,200	2,340	.0	.....	2,340	1.95	2.25	144,000	A.
April.....	8,670	2,120	5,510	33.5	24	5,570	4.64	5.18	331,000	A.
May.....	13,300	5,490	9,210	86.9	51	9,350	7.79	8.98	575,000	A.
June.....	12,800	4,250	7,030	101	55	7,190	5.99	6.68	428,000	A.
July.....	7,030	1,240	3,760	104	58	3,920	3.27	3.77	241,000	A.
August.....	1,930	948	1,180	113	53	1,350	1.12	1.29	83,000	A.
September.....	1,450	776	904	90.5	37	1,030	.858	.96	61,300	A.
The year.....	13,300	776	3,110	51.1	.....	3,190	2.66	36.07	2,310,000	
1914-15.										
October.....	1,980	834	1,290	36.2	23	1,350	1.12	1.29	83,000	A.
November.....	5,480	1,850	2,960	.0	.....	2,960	2.47	2.76	176,000	A.
December.....	2,110	940	1,240	.0	.....	1,240	1.03	1.19	76,200	A.
January.....	940	620	787	.0	.....	787	.656	.76	48,400	A.
February.....	820	660	705	.0	.....	705	.588	.61	39,200	A.
March.....	3,380	660	1,550	.0	.....	1,550	1.29	1.49	95,300	A.
April.....	9,200	2,710	5,530	21.4	25	5,580	4.65	5.19	332,000	A.
May.....	6,300	3,150	3,900	113	53	4,070	3.39	3.91	250,000	A.
June.....	4,700	1,320	2,590	122	57	2,770	2.31	2.58	165,000	A.
July.....	2,250	1,010	1,360	104	60	1,520	1.27	1.46	93,500	B.
August.....	1,330	888	931	128	55	1,110	.925	1.07	68,200	B.
September.....	888	.....	548	102	39	689	.574	.64	41,000	C.
The year.....	9,200	.....	1,950	52.5	.....	2,030	1.69	22.95	1,470,000	
1915-16.										
October.....	1,950	.....	807	43.9	24	875	.729	.84	53,800	C.
November.....	3,300	860	1,350	.0	.....	1,350	1.12	1.25	80,300	B.
December.....	1,240	770	975	.0	.....	975	.812	.94	60,000	B.
January.....	950	.....	803	.0	.....	803	.669	.77	49,400	B.
February.....	1,700	690	1,110	.0	.....	1,110	.925	1.00	63,800	B.
March.....	5,930	1,300	3,300	.0	.....	3,300	2.75	3.17	203,000	B.
April.....	8,960	3,820	6,290	.0	25	6,320	5.27	5.88	376,000	C.
May.....	15,000	6,610	9,750	70.0	53	9,870	8.22	9.48	607,000	C.
June.....	24,500	8,850	14,000	125	57	14,200	11.8	13.17	845,000	C.
July.....	13,900	5,310	9,840	121	60	10,000	8.33	9.60	615,000	A.
August.....	6,250	2,230	3,660	125	55	3,840	3.20	3.69	236,000	A.
September.....	2,500	1,050	1,430	103	39	1,570	1.31	1.46	93,400	A.
The year.....	24,500	.....	4,450	49.2	.....	4,520	3.77	51.25	3,280,000	
1916-17.										
October.....	1,050	722	795	12.0	24	831	.692	.80	51,100	B.
November.....	1,370	600	798	5.8	.....	804	.670	.75	47,800	C.
December.....	750	.....	690	.0	.....	690	.575	.66	42,400	C.
January.....	950	.....	708	.0	.....	708	.590	.68	43,500	D.
February.....	1,030	.....	901	.0	.....	901	.751	.78	50,000	B.
March.....	1,110	600	790	.0	.....	790	.658	.76	48,600	B.
April.....	2,710	690	1,450	37.4	26	1,510	1.26	1.41	89,800	B.
May.....	16,100	2,560	7,730	116	54	7,900	6.58	7.59	486,000	A.
June.....	16,200	8,370	11,700	148	58	11,900	9.92	11.07	708,000	A.
July.....	14,000	3,600	8,820	163	61	9,040	7.53	8.68	556,000	A.
August.....	3,450	1,300	2,140	178	56	2,370	1.98	2.28	146,000	A.
September.....	1,460	939	989	189	40	1,220	1.02	1.14	72,600	B.
The year.....	16,200	.....	3,140	71.1	.....	3,230	2.69	36.60	2,340,000	

NOTE.—Maximum discharge, 27,100 second-feet Dec. 30 or 31, 1917; minimum discharge, 470 second-feet Sept. 14-16, 1915; discharge may have been lower from Sept. 17 to Oct. 28, 1915, when gage heights were not available.

Yearly discharge of Wenatchee River at Cashmere and Dryden.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1905.....	14,900	650	885	Oct.....	3,240	2.53	34.39	2,350,000
1906.....	11,600	780	965	Dec.....	2,870	2.24	30.38	2,080,000
1907.....		830	1,040	Jan.....	4,300	3.36	45.53	3,110,000
1908.....			1,050	Sept.....	3,870	3.02	41.21	2,810,000
1909.....	21,400		770	Feb.....	3,180	2.48	33.77	2,310,000
1910.....	20,900	670	968	Sept.....	4,470	3.72	50.51	3,230,000
1911.....	15,500	670	900	Feb.....	3,180	2.65	35.99	2,300,000
1912.....	18,000	580	709	Oct.....	2,990	2.49	33.96	2,170,000
1913.....	20,700	654	755	Oct.....	3,760	3.13	42.63	2,730,000
1914.....	13,300	776	1,030	Sept.....	3,190	2.66	36.07	2,310,000
1915.....	9,200		689	Sept.....	2,030	1.69	22.95	1,470,000
1916.....	24,500		803	Jan.....	4,520	3.77	51.25	3,280,000
1917.....	16,200		690	Dec.....	3,230	2.69	36.60	2,340,000
The period.	24,500		689	Sept., 1915	3,450	2.80	38.10	2,500,000

WENATCHEE RIVER NEAR WENATCHEE (97).

Staff gage at highway bridge 6 miles above mouth of river and 7 miles west of Wenatchee, in Chelan County.

A small amount of water was diverted above the station for irrigation.

Drainage area, 1,310 square miles; measured on topographic maps.

Monthly discharge of Wenatchee River near Wenatchee.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1897.					
August.....			2,100	129,000	C.
September.....			1,000	59,500	C.
October.....	955	700	755	46,400	C.
The period.....				235,000	

NOTE.—Maximum discharge, 13,300 second-feet Nov. 20; minimum discharge, 700 second-feet Oct. 4-12, 16-21, 29-30, Nov. 1-7. Fragmentary record Aug. 7 to Nov. 20, 1897.

WHITE RIVER NEAR CHIWAUKUM (98).

Staff gage at highway bridge 4 miles above Wenatchee Lake and 14 miles northwest of Chiwaukum, in Chelan County.

Drainage area, 150 square miles; measured on topographic maps.

Monthly discharge of White River near Chiwaukum.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911.							
June.....	3,780	1,390	2,190	14.6	16.29	130,000	B.
July.....	2,020	730	1,290	8.60	9.92	79,300	B.
August.....	810	358	510	3.40	3.92	31,400	B.
September.....	650	167	317	2.11	2.35	18,900	C.
The period.....						260,000	
1911-12.							
October.....	194	120	150	1.00	1.15	9,220	C.
November.....	1,020	114	325	2.17	2.42	19,300	C.
December.....	327	194	239	1.59	1.83	14,700	C.
January.....	271	204	209	1.39	1.60	12,900	C.
February.....	247	204	222	1.48	1.60	12,800	C.
March.....	423	150	196	1.31	1.51	12,100	C.
April.....	892	532	701	4.67	5.21	41,700	B.
May.....			2,100	14.0	16.14	129,000	D.
June.....			2,300	15.3	17.07	137,000	D.
July.....			1,200	8.00	9.22	73,800	D.
August.....			510	3.40	3.92	31,400	D.
September.....			260	1.73	1.93	15,500	D.
The year.....			701	4.67	63.60	509,000	
1913.							
July 26-31.....			1,580	10.5	2.34	18,800	B.
August.....			771	5.14	5.93	47,400	B.
1913-14.							
October.....			270	1.80	12.18	97,500	D.
November.....							
December.....							
January.....							
February.....							
March.....							
April.....			1,000	6.67	7.44	59,500	C.
May.....			1,850	12.3	14.18	114,000	C.
June.....			1,600	10.7	11.94	95,200	C.
July.....			1,280	8.53	9.83	78,700	B.
August.....			430	2.87	3.31	26,400	C.
September.....			250	1.67	1.86	14,900	C.
The year.....			671	4.47	60.74	486,000	

NOTE.—Maximum discharge during period of record, 3,780 second-feet June 13, 1911; minimum discharge, 114 second-feet Nov. 1-3, 1911. Mean discharge May to September, 1912, and October, 1913, to March, 1914, estimated by percentage comparison with determinations obtained by subtracting discharge of Chiwawa River from discharge of Wenatchee River near Leavenworth; should be used with caution. Mean discharge August, 1913, and April to September, 1914, obtained by estimating discharge for days when gage was not read by interpolation or comparison with records of Wenatchee and Chiwawa rivers near Leavenworth.

NASON CREEK AT NASON (99).

Staff gage at mouth of Roaring Creek and two-thirds mile northwest of Nason, in Chelan County.

Drainage area, 89 square miles, measured on topographic maps.

Monthly discharge of Nason Creek at Nason.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911.							
June 4-30.....	1,390	314	720	8.09	8.12	38,600	B.
July.....	374	105	237	2.66	3.07	14,600	B.
August.....	101	48	72.7	.817	.94	4,470	A.
September.....	152		80.9	.909	1.01	4,810	C.
The period.....						62,500	

NOTE.—Maximum discharge during period of record, 1,390 second-feet June 13; minimum discharge, 44 second-feet Sept. 1-3.

CHIWAWA RIVER NEAR LEAVENWORTH (100).

Staff gage at Jordan ranch, 1 mile below Deep Creek, 3 miles above mouth, and 14 miles north of Leavenworth, in Chelan County.

The Wenatchee Park Land & Irrigation Co. diverted a maximum of about 12 second-feet above the station during irrigation seasons beginning in 1914.

Drainage area, 181 square miles; measured on topographic maps.

Monthly discharge of Chiwawa River near Leavenworth.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911.							
May 29-31.....	1,600	1,080	1,330	7.35	0.82	7,910	B.
June.....	2,290	988	1,540	8.51	9.50	91,600	B.
July.....	1,210	470	830	4.59	5.29	51,000	B.
August.....	500	230	321	1.77	2.04	19,700	A.
September.....	335	150	231	1.28	1.43	13,700	A.
The period.....						184,000	
1911-12.							
October.....	150	123	139	.768	.89	8,550	A.
November.....	412	123	205	1.13	1.26	12,200	A.
December.....	196		159	.878	1.01	9,780	C.
January.....			148	.818	.94	9,100	D.
February.....		125	151	.834	.90	8,690	C.
March.....	230	114	147	.812	.94	9,040	A.
April.....	1,210	290	622	3.44	3.84	37,000	B.
May.....			^a 1,900	10.5	12.11	117,000	D.
June.....			^a 1,900	10.5	11.71	113,000	D.
July.....			^a 730	4.03	4.65	44,900	D.
August.....			^a 330	1.82	2.10	20,300	D.
September.....			^a 190	1.05	1.17	11,300	D.
The period.....			552	3.05	41.52	401,000	
1912-13.							
October.....			^a 140	.773	.89	8,610	D.
November.....			^a 150	.829	.92	8,930	D.
December.....			^a 150	.829	.96	9,220	D.
January.....			^a 140	.773	.89	8,610	D.
February.....			^a 180	.994	1.04	10,000	D.
March.....			^a 190	1.05	1.21	11,700	D.
April.....			^d 680	3.76	4.20	40,500	D.
May.....			^a 1,700	9.39	10.83	105,000	D.
June.....			^a 2,700	14.9	16.62	161,000	D.
July.....	1,670	728	1,240	6.85	7.90	76,200	A.
August.....	764	322	487	2.69	3.10	29,900	A.
September.....	1,260	240	351	1.94	2.16	20,900	A.
The year.....			676	3.73	50.72	491,000	
1913-14.							
October.....	368	221	295	1.63	1.88	18,100	A.
November.....	530	240	308	1.70	1.90	18,300	A.
December.....	300	193	222	1.23	1.42	13,600	A.
January.....	560		257	1.42	1.64	15,800	C.
February.....	206		164	.906	.94	9,110	C.
March.....	530	193	364	2.01	2.32	22,400	B.
April.....	2,020	368	1,270	7.02	7.83	75,600	A.
May.....	2,270	1,170	^b 1,680	9.28	10.70	103,000	A.
June.....	2,270	919	^b 1,370	7.57	8.45	81,500	A.
July.....	1,360	444	^b 830	4.59	5.29	51,000	A.
August.....	500	210	^b 302	1.67	1.92	18,600	A.
September.....	322	160	^b 224	1.24	1.38	13,300	A.
The year.....	2,270		604	3.34	45.67	440,000	
1914.							
October.....	368	173	242	1.34	1.54	14,900	A.

^a Estimated by percentage comparison with record of Wenatchee River near Leavenworth; should be used with caution.

^b Includes estimate of diversion above gage for irrigation as follows: May and June, 10 second-feet; July, 12 second-feet; August, 9 second-feet; and September, 8 second-feet.

NOTE.—Maximum discharge during period occurred in June, 1913, when gage heights were not available; minimum discharge estimated at 90 second-feet Feb. 6, 1914, when stage-discharge relation was affected by ice.

CHIWAUKUM CREEK NEAR CHIWAUKUM (101).

Staff gage at trail crossing half a mile above mouth and 1 mile southeast of Chiwaukum, in Chelan County.

Drainage area, 49.6 square miles; measured on topographic maps.

Monthly discharge of Chiwaukum Creek near Chiwaukum, for 1911.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911.							
June.....	803	255	382	7.70	8.59	22,700	B.
July.....	262	67	154	3.10	3.57	9,470	B.
August.....	72	33	45.1	.909	1.05	2,770	B.
September.....	47	27	34.4	.694	.77	2,050	B.
October.....			20	.403	.46	1,230	D.
The period.....						38,200	

NOTE.—Mean discharge for October estimated by percentage comparison with record of Icicle Creek near Leavenworth.

ICICLE CREEK NEAR LEAVENWORTH (102).

Staff gage at Lamb ranch, 1½ miles above mouth and 2½ miles south of Leavenworth, in Chelan County.

Water is diverted above the station for irrigation.

Drainage area, 211 square miles; measured on topographic maps.

Monthly discharge of Icicle Creek (including diversions) near Leavenworth.

Month.	Discharge in second-feet.					Combined run-off.		Accu- racy.	
	Icicle Creek.			Esti- mated mean. diver- sion. ^a	Combined.		Inches.		Acre-feet.
	Maxi- mum.	Mini- mum.	Mean.		Mean.	Per square mile.			
1911.									
June.....			1,870	8	1,890	8.91	9.94	112,000	A.
July.....	1,110	350	675	10	685	3.25	3.75	42,100	A.
August.....	345	139	225	10	235	1.11	1.28	14,400	A.
September.....	395	139	215	2	217	1.03	1.15	12,900	A.
The period.....								181,000	
1911-12.									
October.....	135	87	111		111	.526	.61	6,820	A.
November.....	1,280	84	328		328	1.55	1.73	19,500	A.
December.....	345	186	237		237	1.12	1.29	14,600	B.
January.....			220		220	1.04	1.20	13,500	B.
February.....		195	223		223	1.06	1.14	12,800	A.
March.....	345	130	186		186	.882	1.02	11,400	A.
April.....	725	420	552		552	2.62	2.92	32,800	A.
May.....	4,120	620	1,970	9	1,980	9.38	10.81	122,000	A.
June.....	3,010	1,000	2,030	14	2,040	9.67	10.79	121,000	A.
July.....	972	345	664	18	682	3.23	3.72	41,900	A.
August.....	370	200	273	18	291	1.38	1.59	17,900	A.
September.....	420	110	195	13	208	.986	1.10	12,400	A.
The year.....	4,120	84	582		588	2.79	37.92	427,000	

^a Based on discharge measurements and capacity of canal. Considerable error in estimate of diversion makes small percentage error in combined flow.

Monthly discharge of Icicle Creek (including diversions) near Leavenworth—Continued.

Month.	Discharge in second-feet.						Combined run-off.		Accu- racy.
	Icicle Creek.			Esti- mated mean. diver- sion.	Combined.		Inches.	Acre-feet.	
	Maxi- mum.	Mini- mum.	Mean.		Mean.	Per square mile.			
1912-13.									
October.....	214	106	144	.....	144	0.682	0.79	8,850	A.
November.....	282	144	203	.....	203	.962	1.07	12,100	A.
December.....	272	130	182	.....	182	.863	.99	11,200	B.
January.....	.....	.....	176	.....	176	.834	.96	10,800	B.
February.....	670	.....	305	.....	305	1.45	1.51	16,900	A.
March.....	272	176	227	.....	227	1.08	1.24	14,000	A.
April.....	1,160	214	605	.....	605	2.87	3.20	36,000	A.
May.....	4,050	620	1,740	9	1,750	8.29	9.56	108,000	A.
June.....	4,640	1,930	2,970	18	2,990	14.2	15.84	178,000	A.
July.....	2,350	725	1,460	23	1,480	7.01	8.08	91,000	A.
August.....	752	248	424	23	447	2.12	2.44	27,500	A.
September.....	890	200	300	14	314	1.49	1.66	18,700	A.
The year.....	4,640	.....	728	.....	736	3.49	47.34	533,000	
1913-14.									
October.....	670	153	360	.....	360	1.71	1.97	22,100	A.
November.....	1,000	195	374	.....	374	1.77	1.98	22,300	A.
December.....	345	176	231	.....	231	1.09	1.26	14,200	A.
January.....	1,160	176	424	.....	424	2.01	2.32	26,100	C.
February.....	320	140	210	.....	210	.995	1.04	11,700	C.
March.....	620	224	392	.....	392	1.86	2.14	24,100	A.
April.....	1,810	395	950	.....	950	4.50	5.02	56,500	A.
May.....	2,890	1,110	1,820	9	1,830	8.67	10.00	113,000	A.
June.....	2,890	780	1,420	18	1,440	6.82	7.61	85,700	A.
July.....	1,330	320	706	23	729	3.46	3.99	44,800	A.
August.....	345	130	226	23	249	1.18	1.36	15,300	A.
September.....	296	110	173	15	188	.891	.99	11,200	A.
The year.....	2,890	110	609	.....	616	2.92	39.68	447,000	
1914.									
October.....	470	130	289	.....	289	1.37	1.58	17,800	A.

NOTE.—Maximum discharge during period of record, 4,760 second-feet June 3, 1913; minimum discharge, 84 second-feet Nov. 2-3, 1911.

PESHASTIN CREEK AT BLEWETT (103).

Staff gage at Blewett, 1½ miles above Negro Creek, 1½ miles below Tronsen Creek, and about 13 miles above mouth of creek, in Chelan County.

Drainage area, 40 square miles; measured on topographic maps.

Monthly discharge of Peshastin Creek at Blewett.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
August.....	4.4	2.4	3.05	188	C.
September.....	4.4	2.7	3.63	216	C.
1911-12.					
October.....	3.8	3.2	3.34	205	C.
November.....	50	3.8	18.7	1,110	C.
December.....	.....	.....	^a 8.68	534	C.
May.....	.....	.....	^b 120	7,380	C.
June.....	.....	.....	24.4	1,450	C.
July.....	.....	.....	^c 6.35	390	

^a Based on actual record Dec. 1-15 and comparison with record of Icicle Creek.

^b Based on actual record May 12-31 and comparison with record of Peshastin Creek near Leavenworth.

^c Based on actual record July 1-7 and comparison with record of Peshastin Creek near Leavenworth.

NOTE.—Maximum discharge during period of record, 221 second-feet May 12-13, 1912; minimum discharge 2.4 second-feet Aug. 25-31, 1911.

PESHASTIN CREEK BELOW INGALLS CREEK, NEAR LEAVENWORTH.

Staff gage at bridge at Allen ranch, three-eighths mile below Ingalls Creek and 9 miles south of Leavenworth, in Chelan County.

Drainage area, 101 square miles; measured on topographic maps.

Monthly discharge of Peshastin Creek below Ingalls Creek, near Leavenworth.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911.							
August.....	92	26	47.8	0.473	0.55	2,940	C.
September.....	70	26	43.7	.433	.48	2,600	C.
1911-12.							
October.....	31	18	24.0	.238	.27	1,480	C.
November.....			<i>a</i> 65	.644	.72	3,870	D.
December.....			<i>b</i> 40	.396	.46	2,460	D.
January.....			<i>b</i> 35	.347	.40	2,150	D.
February.....			<i>b</i> 35	.347	.37	2,010	D.
March.....			<i>b</i> 35	.347	.40	2,150	D.
April.....			<i>c</i> 248	2.46	2.74	14,800	C.
May.....	1,460	335	596	5.90	6.80	36,600	C.
June.....	540	180	378	3.74	4.17	22,500	C.
July.....	206		<i>d</i> 111	1.10	1.27	6,820	C.
August.....			<i>b</i> 60	.594	.68	3,690	D.
September.....			<i>b</i> 40	.396	.44	2,380	D.
The year.....			139	1.38	18.72	101,000	

a Based on actual record Nov. 1-11 and comparison with record of Icicle Creek.

b Estimated by percentage comparison with record of Icicle Creek; should be used with caution.

c Based on actual record Apr. 7-30 and comparison with record of Icicle Creek.

d Based on actual record July 1-20, and 27. Discharge July 21-26, interpolated; July 28-31, estimated at 60 second-feet.

NOTE.—Maximum discharge during period of record, 1,560 second-feet at 6 p. m., May 20, 1912; minimum discharge, 18 second-feet Oct. 25 to Nov. 4 and Nov. 11, 1911.

CRAB CREEK BASIN.

CRAB CREEK⁹ AT ADRIAN (105).

Staff gage just above Northern Pacific Railway crossing, a quarter of a mile above Adrian, and just below mouth of a coulee from the north, in Grant County.

Monthly discharge of Crab Creek at Adrian.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1910.					
January.....	1,270	0	106	6,520	D.
February.....	190	0	17.8	989	D.
March.....	1,070	95	277	17,000	D.
April.....	95	22	49.7	2,960	D.
May.....	22	0	5.0	307	D.
The period.....				27,800	
1911.					
March.....	700	0	162	9,960	D.
April.....	46	0	16.3	970	D.
The period.....				10,900	
1912.					
February.....	80	0	32.9	1,890	D.
March.....	97	15	25.7	1,580	D.
April.....	15	0	4.8	286	D.
The period.....				3,760	

NOTE.—Discharge revised in this report. No flow past gage except as shown in table. Total run-off for the periods is therefore total for the years.

⁹ Formerly known as Upper Crab Creek.

CRAB CREEK¹⁰ NEAR WARDEN (106).

Staff gage in SW. $\frac{1}{4}$ sec. 24, T. 17 N., R. 28 E., 10 miles west of Warden, in Grant County, prior to January 15, 1912; 4 miles below original site thereafter. Both gages were below First Coulee and Drumheller Springs and above Lind Coulee.

Monthly discharge of Crab Creek near Warden.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
June 23-30.....	76	66	72.2	1,150	D.
July.....	64	40	47.8	2,940	D.
August.....	43	32	37.1	2,280	D.
September.....	33	26	29.3	1,740	D.
The period.....				8,110	
1909-10.					
October.....	31	29	30.0	1,840	D.
November.....	40	29	32.7	1,950	D.
December.....			37.4	2,300	D.
March.....	308	160	202	12,400	D.
April.....	185	83	131	7,800	D.
May.....	90	55	69.2	4,250	D.
June.....	66	42	55.6	3,310	D.
July.....	52	36	44.8	2,750	D.
August.....	37	33	35.7	2,200	D.
September.....	41	30	35.3	2,100	D.
1910-11.					
October.....	38	26	33.0	2,030	D.
November.....	25	20	23.5	1,400	D.
December.....	24	24	24.0	1,480	D.
February.....	55	35	43.5	2,420	D.
March.....	35	27	32.5	2,000	D.
April.....	35	21	24.8	1,480	D.
May.....	21	21	21.0	1,290	D.
June.....	21	21	21.0	1,250	D.
July.....	15	15	15.0	922	D.
August.....	15	11	14.2	873	D.
September.....	21	15	16.4	976	D.
1911-12.					
October.....			15.0	922	D.
November.....			21.0	1,250	D.
December.....			25.9	1,590	D.
February.....			30.0	1,730	D.
March.....			31.5	1,940	D.
April.....			24.9	1,480	D.
May.....			18.8	1,160	D.
June.....			13.0	774	D.

NOTE.—Discharge for January and February, 1910, previously published subject to error and discarded on account of insufficient information regarding ice. Discharge October to December, 1911, and February to June, 1912 (not previously published) estimated from fragmentary record of daily discharge.

ROCKY FORD CREEK NEAR EPHRATA (107).

Staff gage from June 21, 1909, to July 3, 1911, in SE. $\frac{1}{4}$ sec. 5, T. 20 N., R. 27 E., 8 miles southeast of Ephrata and 6 miles below springs from which creek receives its water supply, in Grant County; from July 3, 1911, to December 31, 1911, in SE. $\frac{1}{4}$ sec. 8, 1 mile below original site.

¹⁰ Formerly called Lower Crab Creek.

Monthly discharge of Rocky Ford Creek near Ephrata.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
June 21-30.....	88	83	83.5	1,660	D.
July.....	93	83	84.8	5,210	D.
August.....	83	79	82.1	5,050	D.
September.....	83	79	79.4	4,720	D.
The period.....				16,600	
1909-10.					
October.....	79	67	73.1	4,490	D.
November.....	75	67	69.4	4,130	D.
January.....	77	67	71.9	4,420	D.
February.....	83	69	74.6	4,140	D.
March.....	88	69	76.1	4,680	D.
April 1-10.....	77	75	75.6	1,500	D.
1911.					
July.....	63	58	59.2	3,640	D.
August.....	113	20	49.4	3,040	D.
September.....	63	46	54.2	3,230	D.
October.....	50	46	46.3	2,850	D.
November.....	46	42	43.6	2,590	D.
December.....	46	38	41.5	2,550	D.
The period.....				17,900	

NOTE.—Discharge June to November, 1909, revised in this report.

YAKIMA RIVER BASIN.

YAKIMA RIVER NEAR MARTIN (108).

Vertical or inclined staff gages, read once or twice daily, within 1 mile of outlet of Keechelus Lake and 3½ miles northwest of Martin, in Kittitas County.

Flow controlled by regulation in Keechelus reservoir. Monthly discharge without storage, since January, 1906, determined from records of stage at reservoir.

Drainage area, 55 square miles (revised); measured on topographic maps.

Monthly discharge of Yakima River near Martin.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1904.							
February.....	194	127	156	2.84	3.06	8,970	A.
March.....	194	127	159	2.89	3.33	9,780	A.
April.....	880	127	499	9.07	10.12	29,700	C.
May.....	1,040	454	733	13.3	15.33	45,100	C.
June.....	1,040	528	785	14.3	15.95	46,700	C.
July.....	642	148	339	6.16	7.10	20,800	B.
August.....	148	76	103	1.87	2.16	6,330	A.
September.....	76	51	58.6	1.07	1.19	3,490	A.
The period.....						171,000	
1904-5.							
October.....	76	51	69.4	1.26			
November.....	566	76	230	4.18	4.66	13,700	B.
December.....	604	194	339	6.16	7.10	20,800	B.
January.....	240	106	143	2.60	3.00	8,790	B.
February.....	240	90	124	2.25	2.34	6,890	B.
March.....	700	274	522	9.49	10.94	32,100	B.
April.....	950	208	419	7.61	8.49	24,900	B.
May.....	1,000	388	603	11.0	12.68	37,100	B.
June.....	977	310	534	9.71	10.83	31,800	B.
July.....	310	90	169	3.07	3.54	10,400	A.
August.....	90	67	79.7	1.45	1.67	4,900	A.
September.....	153	66	80.9	1.47	1.64	4,108	A.
The year.....	1,000	51	277	5.04	68.34	200,000	

Monthly discharge of Yakima River near Martin—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1905-6.										
October.....	734	153	430	26,400	(a)	26,400	430	7.81	9.00	A.
November.....	288	138	191	11,400	(a)	11,400	191	3.47	3.87	A.
December.....	254	138	173	10,600	(a)	10,600	173	3.15	3.63	A.
January.....	492	134	250	15,400	+1,360	16,800	273	4.96	5.72	A.
February.....	357	185	255	14,200	-340	13,900	250	4.55	4.74	A.
March.....	263	161	200	12,300	-29	12,300	200	3.64	4.20	A.
April.....	968	326	581	34,600	+2,080	36,700	616	11.2	12.50	A.
May.....	1,000	438	682	41,900	-715	41,200	670	12.2	14.07	A.
June.....	565	306	416	24,800	-1,000	23,800	400	7.27	8.11	A.
July.....	302	86	177	10,900	-1,380	9,520	155	2.82	3.25	A.
August.....	83	56	67.3	4,140	-603	3,540	57.5	1.05	1.21	A.
September.....	86	52	68.9	4,100	+56	4,160	69.9	1.27	1.42	A.
The year.....	1,000	52	291	211,000	-571	210,000	290	5.28	71.72	
1906-7.										
October.....	565	83	265	16,300	+2,720	19,000	309	5.61	6.47	A.
November.....	6,150	0	979	58,300	+1,080	59,400	999	18.2	20.31	B.
December.....	770	0	272	16,700	+4,520	21,200	346	6.29	7.25	A.
January.....	986	0	249	15,300	-3,770	11,500	187	3.40	3.92	A.
February.....	1,360	0	490	27,200	+1,420	28,600	515	9.36	9.75	A.
March.....	567	149	360	22,100	-2,200	19,900	324	5.90	6.80	A.
April.....	577	0	267	15,900	+6,310	22,200	373	6.78	7.56	A.
May.....	1,400	452	886	54,500	+6,960	61,500	1,000	18.2	20.98	A.
June.....	1,270	321	548	32,600	-1,050	31,500	529	9.62	10.73	A.
July.....	348	88	168	10,300	-242	10,100	164	2.98	3.44	A.
August.....	317	68	172	10,600	-4,610	5,990	97.4	1.77	2.04	B.
September.....	291	0	130	7,740	-2,280	5,460	89.1	1.62	1.81	B.
The year.....	6,150	0	397	288,000	+8,860	296,000	410	7.46	101.06	
1907-8.										
October.....	287	0	144	8,850	-4,300	4,550	74	1.35	1.56	A.
November.....	361	103	153	9,100	+5,400	14,500	244	4.44	4.95	A.
December.....	395	268	348	21,400	-268	21,100	343	6.24	7.19	A.
January.....	366	169	265	16,300	-4,680	11,600	189	3.44	3.97	A.
February.....	164	136	147	8,460	-780	7,680	134	2.44	2.63	A.
March.....	979	0	319	19,600	+12,800	32,400	527	9.58	11.04	A.
April.....	1,430	0	466	27,700	+343	28,000	470	8.55	9.54	A.
May.....	1,010	479	695	42,700	-281	42,400	690	12.5	14.41	A.
June.....	1,860	548	884	52,600	-68	52,500	882	16.0	17.85	A.
July.....	667	180	463	28,500	-955	27,500	447	8.13	9.37	A.
August.....	592	101	261	16,000	-7,850	8,150	133	2.42	2.79	A.
September.....	452	99	190	11,300	-7,000	4,300	72.2	1.31	1.46	B.
The year.....	1,860	0	362	263,000	-7,640	255,000	351	6.38	86.76	
1908-9.										
October.....	151	69	88.7	5,450	+3,510	8,960	146	2.65	3.06	B.
November.....	316	0	117	6,960	+6,950	13,900	234	4.25	4.74	B.
December.....	291	0	46.5	2,860	+4,580	7,440	121	2.20	2.54	A.
January.....	366	134	209	12,900	-135	12,800	208	3.78	4.36	A.
February.....	255	125	162	9,000	-60	8,940	161	2.93	3.05	A.
March.....	261	112	148	9,100	+285	9,380	153	2.78	3.20	A.
April.....	650	198	305	18,100	+435	18,500	311	5.65	6.30	A.
May.....	1,230	426	664	40,800	+936	41,700	678	12.3	14.18	A.
June.....	1,940	465	942	56,100	-861	55,200	927	16.8	18.74	A.
July.....	525	144	308	18,900	-885	18,000	293	5.33	6.14	B.
August.....	592	90	228	14,000	-7,490	6,510	106	1.93	2.22	A.
September.....	335	116	204	12,100	-5,690	6,410	108	1.96	2.19	A.
The year.....	1,940	0	285	206,000	+1,580	208,000	287	5.22	70.72	

^a Range of stage in Keechelus Lake not observed prior to Jan. 12, 1906.

Monthly discharge of Yakima River near Martin—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1909-10.										
October.....	134	108	121	7,440	-140	7,300	118	2.14	2.47	B.
November.....	4,370	0	1,010	60,100	+16,700	76,800	1,290	23.5	26.22	A.
December.....	1,580	172	405	24,900	-3,210	21,700	353	6.42	7.40	A.
January.....	467	88	179	11,000	+450	11,400	186	3.38	3.90	A.
February.....	781	123	167	9,280	-330	8,950	161	2.93	3.05	A.
March.....	1,060	239	553	34,000	+270	34,300	558	10.1	11.64	A.
April.....	1,800	266	623	37,100	+495	37,600	632	11.5	12.83	A.
May.....	1,960	484	871	53,600	+215	53,800	875	15.9	18.33	A.
June.....	800	207	408	24,200	-950	23,200	390	7.09	7.91	A.
July.....	201	80	138	8,480	-570	7,910	129	2.35	2.71	A.
August.....	450	62	144	8,850	-6,440	2,410	39.2	.713	.82	A.
September.....	303	76	178	10,600	-6,060	4,540	76.3	1.39	1.55	A.
The year.....	4,370	0	400	290,000	+430	290,000	400	7.27	98.83	
1910-11.										
October.....	699	100	419	25,800	+1,890	27,700	450	8.19	9.44	A.
November.....	2,200	0	511	30,400	+8,950	39,400	662	12.0	13.39	A.
December.....	342	196	257	15,800	-1,740	14,100	229	4.16	4.80	C.
January.....	193	3	130	7,990	+3,800	11,800	192	3.49	4.02	A.
February.....	127	80	103	5,720	-180	5,540	99.8	1.82	1.90	A.
March.....	590	77	153	9,410	+360	9,770	159	2.89	3.33	A.
April.....	705	153	250	14,900	-1,290	13,600	229	4.16	4.64	A.
May.....	1,050	32	539	33,100	+2,950	36,000	585	10.6	12.22	A.
June.....	1,360	318	686	40,800	-1,450	39,400	662	12.0	13.39	A.
July.....	645	135	293	18,000	-5,320	12,700	207	3.76	4.34	A.
August.....	358	100	199	12,200	-8,760	3,440	55.9	1.02	1.18	A.
September.....	104	3	20	1,190	+7,740	8,930	150	2.73	3.05	C.
The year.....	2,200	0	298	215,000	+6,950	222,000	307	5.58	75.70	
1911-12.										
October.....	3	3	3	184	+4,880	5,060	82.3	1.50	1.73	D.
November.....	4,860	3	827	49,200	-660	48,500	815	14.8	16.51	A.
December.....	510	3	105	6,460	+1,800	8,260	134	2.44	2.81	C.
January.....	871	135	298	18,300	+690	19,000	309	5.62	6.48	A.
February.....	430	38	253	14,600	-795	13,800	240	4.36	4.70	A.
March.....	204	95	122	7,500	+105	7,600	124	2.25	2.59	A.
April.....	435	196	288	17,100	+600	17,700	297	5.40	6.03	A.
May.....	1,610	412	917	56,400	-1,100	55,300	899	16.3	18.79	A.
June.....	1,350	275	614	36,500	-15	36,500	613	11.1	12.40	A.
July.....	282	92	173	10,600	+120	10,700	174	3.16	3.64	A.
August.....	545	106	248	15,200	-9,070	6,130	99.7	1.81	2.09	A.
September.....	398	3	151	8,980	-2,160	6,820	115	2.09	2.33	B.
The year.....	4,860	3	332	241,000	-5,600	235,000	324	5.89	80.10	
1912-13.										
October.....	416	5	127	7,810	+1,020	8,830	144	2.62	3.02	A.
November.....	452	77	276	16,400	-522	15,900	267	4.85	5.41	A.
December.....	306	15	48.7	2,990	+8,980	12,000	195	3.55	4.09	B.
January.....	485	30	209	12,800	+2,190	15,000	244	4.44	5.12	A.
February.....	784	120	254	14,100	-120	14,000	252	4.58	4.77	A.
March.....	395	152	236	14,500	-4,700	9,800	159	2.89	3.33	A.
April.....	668	27	287	17,100	+4,620	21,700	365	6.64	7.41	A.
May.....	1,400	299	773	47,500	+1,230	48,700	792	14.4	16.60	A.
June.....	1,720	725	1,050	62,500	-2,780	59,700	1,000	18.2	20.31	A.
July.....	725	154	470	28,900	-4,990	23,900	389	7.07	8.15	A.
August.....	251	12	86	5,290	+1,080	6,370	104	1.89	2.18	B.
September.....	324	8	38	2,250	+4,110	6,360	107	1.94	2.16	B.
The year.....	1,720	5	321	232,000	+10,100	242,000	335	6.09	82.55	

Monthly discharge of Yakima River near Martin—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1913-14.										
October.....	560	266	388	23,900	-6,070	17,800	290	5.27	6.08	A.
November.....	485	16	204	12,100	+4,400	16,500	277	5.04	5.62	A.
December.....	251	112	165	10,100	-1,900	8,200	133	2.42	2.79	A.
January.....	1,040	111	334	20,500	+1,110	21,600	351	6.38	7.36	A.
February.....	185	111	144	8,010	-225	7,780	140	2.55	2.66	A.
March.....	754	21	395	24,300	-3,280	21,000	342	6.22	7.17	A.
April.....	1,180	23	509	30,300	+7,980	38,300	644	11.7	13.05	A.
May.....	1,560	317	1,010	62,100	-5,560	56,500	919	16.7	19.25	A.
June.....	1,110	45	527	31,300	-4,340	27,000	454	8.25	9.20	A.
July.....	357	36	202	12,400	-5,070	7,330	119	2.16	2.49	B.
August.....	228	47	106	6,500	-3,560	2,940	47.8	.869	1.00	B.
September.....	202	70	104	6,160	-1,440	4,720	79.3	1.44	1.61	B.
The year.....	1,560	16	342	248,000	-18,000	230,000	318	5.78	78.28	
1914-15.										
October.....	900	112	294	18,100	-5,290	12,800	208	3.78	4.36	C.
November.....	1,220	290	549	32,700	-2,200	30,500	513	9.33	10.41	C.
December.....	359	15	172	10,600	-2,250	8,350	136	2.47	2.85	C.
January.....	344	71	116	7,120	-1,720	5,400	87.8	1.60	1.84	C.
February.....	134	69	86.5	4,800	-425	4,380	78.9	1.43	1.49	C.
March.....	4,240	76	551	33,900	-13,400	20,500	333	6.05	6.98	C.
April.....	1,580	300	667	39,700	-1,300	38,300	644	11.71	13.07	B.
May.....	318	4	200	12,300	+4,220	16,500	268	4.87	5.62	B.
June.....	185	1	73.3	4,360	+3,370	7,730	130	2.36	2.63	C.
July.....	97	67	80.8	4,970	-468	4,500	73.2	1.33	1.53	B.
August.....	67	43	52.9	3,250	-494	2,760	44.9	.82	.94	C.
September.....	79	29	49.2	2,930	+494	3,420	57.5	1.05	1.17	C.
The year.....	4,240	1	241	175,000	-19,500	155,000	214	3.89	52.89	
1915-16.										
October.....	746	0	136	8,360	+5,830	14,200	231	4.20	4.84	B.
November.....	1,260	286	605	36,000	-14,100	21,900	368	6.69	7.46	C.
December.....	429	199	281	17,300	+472	17,800	290	5.27	6.08	C.
January.....	309	144	196	12,000	-1,970	10,000	163	2.96	3.41	C.
February.....	265	161	207	11,900	+965	12,900	224	4.07	4.39	C.
March.....	759	21	447	27,500	+3,990	31,500	512	9.31	10.73	C.
April.....	645	22	338	20,100	+9,170	29,300	492	8.95	9.99	B.
May.....	1,650	645	856	52,600	-4,970	47,600	774	14.1	16.26	B.
June.....	1,370	692	1,090	64,600	+12,100	76,700	1,290	23.5	26.22	B.
July.....	1,300	742	1,090	67,000	-10,800	56,200	914	16.6	19.14	B.
August.....	692	5	176	10,800	+4,380	15,200	247	4.49	5.18	B.
September.....	5	3	4	240	+5,670	5,910	99.3	1.80	2.02	C.
The year.....	1,650	0	452	328,000	+10,700	339,000	467	8.49	115.72	
1916-17.										
October.....	8	3	3.35	206	+4,100	4,310	70.1	1.27	1.46	D.
November.....	851	7	272	16,200	-3,190	13,000	218	3.96	4.42	B.
December.....	851	148	457	28,100	-22,100	6,000	97.6	1.77	2.04	B.
January.....	205	1	112	6,860	+4,580	11,400	185	3.36	3.87	B.
February.....	1	1	1	55.5	+14,500	14,600	263	4.78	4.98	D.
March.....	350	1	135	8,320	-918	7,400	120	2.18	2.51	B.
April.....	316	1	196	11,600	+279	11,900	200	3.64	4.06	B.
May.....	1,380	1	515	31,700	+11,900	43,600	709	12.9	14.87	B.
June.....	1,540	256	820	48,800	+21,100	69,900	1,170	21.3	23.76	B.
July.....	1,620	316	912	56,100	+217	56,300	916	16.6	19.14	B.
August.....	316	5	174	10,700	+439	11,100	181	3.29	3.79	B.
September.....	1,830	1	190	11,300	-7,520	3,780	63.5	1.15	1.28	B.
The year.....	1,830	1	318	230,000	+23,400	253,000	349	6.35	86.18	

Monthly discharge of Yakima River near Martin—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1917-18.										
October.....	1	0	0.23	14.1	+4,050	4,060	66	1.20	1.38	D.
November.....	1,560	0	741	44,100	-35,900	8,200	138	2.51	2.80	B.
December.....	1,760	0	799	49,100	+43,600	92,700	1,510	27.5	31.70	B.
January.....	1,800	9	1,270	78,100	-33,600	44,500	724	13.2	15.22	A.
February.....	9	5	8.07	448	+12,200	12,600	227	4.13	4.30	C.
March.....	5	4	4.58	282	+9,390	9,670	157	2.85	3.29	D.
April.....	770	5	158	9,400	+16,000	25,400	427	7.76	8.66	B.
May.....	867	24	153	9,410	+26,800	36,200	589	10.7	12.34	B.
June.....	1,130	221	606	36,100	+240	36,300	610	11.1	12.38	B.
July.....	947	78	214	13,200	-2,820	10,400	169	3.07	3.54	A.
August.....	1,840	508	1,450	89,200	-76,300	12,900	210	3.82	4.40	A.
September.....	534	107	237	14,100	-9,400	4,700	79	1.44	1.61	A.
The year.....	1,840	0	474	343,000	-45,800	298,000	411	7.47	101.62	
1918-19.										
October.....	698	.2	123	7,590	+11,200	18,800	306	5.56	6.41	
November.....	879	.4	490	29,200	-11,100	18,100	304	5.53	6.17	
December.....	1,010	289	636	39,100	+2,480	41,600	677	12.3	14.18	
January.....	308	3	124	7,650	+18,600	26,200	426	7.75	8.94	
February.....	1,010	3	212	11,800	-1,900	9,900	178	3.24	3.37	
March.....	44	15	27.7	1,700	+6,810	8,510	138	2.51	2.89	
April.....	16	14	14.9	887	+26,400	27,300	459	8.35	9.32	
May.....	1,220	14	451	27,700	+19,600	47,300	769	14.0	16.14	
June.....	828	18	356	21,200	+16,300	37,500	630	11.5	12.83	
July.....	547	24	231	14,200	+2,410	16,600	270	4.91	5.66	
August.....	858	189	433	26,600	-22,200	4,400	71.6	1.30	1.50	
September.....	1,400	547	804	47,800	-43,300	4,500	75.6	1.37	1.53	
The year.....	1,400	.2	325	235,000	+25,300	261,000	360	6.55	88.94	

NOTE.—Maximum discharge during period of record, 7,370 second-feet at 10.45 a. m., Mar. 26, 1915, when temporary crib dam washed away; practically no flow when gates of Keechelus reservoir are closed.

Yearly discharge of Yakima River near Martin.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1905.....	1,000	51	69.4	Oct.....	277	5.04	68.34	200,000
1906.....	1,000	52	57.5	Aug.....	290	5.28	71.72	210,000
1907.....	6,150	0	89.1	Sept.....	410	7.46	101.06	296,000
1908.....	1,860	0	72.2	Sept.....	351	6.38	86.76	255,000
1909.....	1,940	0	106	Aug.....	287	5.22	70.72	208,000
1910.....	4,370	0	39.2	Aug.....	400	7.27	98.83	290,000
1911.....	2,200	0	55.9	Aug.....	307	5.58	75.70	222,000
1912.....	4,860	3	82.3	Oct.....	324	5.89	80.10	235,000
1913.....	1,720	5	104	Aug.....	335	6.09	82.55	242,000
1914.....	1,560	16	47.8	Aug.....	318	5.78	78.28	230,000
1915.....	4,240	1	44.9	Aug.....	214	3.89	52.89	155,000
1916.....	1,650	0	99.3	Sept.....	467	8.49	115.72	339,000
1917.....	1,830	1	63.5	Sept.....	349	6.35	86.18	253,000
1918.....	1,840	0	66.0	Oct.....	411	7.47	101.62	298,000
1919.....	1,400	.2	71.6	Aug.....	360	6.55	88.76	260,000
The period.	6,150	0	39.2	Aug., 1910.	340	6.18	83.95	246,000

YAKIMA RIVER AT EASTON (109).

Staff or chain gages, read once or twice daily, at highway bridge at Easton, 1½ miles below Kachess River, in Kittitas County.

Flow controlled by regulation in Keechelus and Kachess reservoirs. Monthly discharge without storage, since February, 1910, determined from records of stage at the reservoirs.

Drainage area, 184 square miles; measured on topographic maps.

Monthly discharge of Yakima River at Easton.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1904.							
May 12-31.....	2,680	1,230	1,970	10.7	7.56	78,300	B.
June.....	2,810	910	1,870	10.2	11.38	111,000	B.
July.....	1,230	402	690	3.75	4.32	42,400	A.
August.....	428	185	316	1.72	1.98	19,400	A.
September.....	337	175	311	1.69	1.89	18,500	A.
October.....	324	195	257	1.40	1.61	15,800	A.
November 1-28.....	910	175	357	1.94	.....	19,800	A.
The period.....	.....	.....	.....	.....	.....	305,000	.....

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge without storage, second-feet.		Depth in inches.	Accu- racy of ob- served dis- charge.
	Maxi- mum.	Mini- mum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1910.										
February (24 days).....	620	364	467	22,200	-195	22,000	462	2.51	2.24	B.
March.....	3,180	882	1,740	107,000	+4,960	112,000	1,820	9.90	11.41	A.
April.....	4,360	1,260	2,030	121,000	+5,220	126,000	2,120	11.50	12.80	A.
May.....	4,200	1,700	2,490	153,000	-2,760	150,000	2,440	13.3	15.33	A.
June.....	1,750	330	913	54,300	+1,500	55,800	938	5.10	5.69	A.
July.....	558	145	294	18,100	+690	18,800	306	1.66	1.91	B.
August.....	641	227	436	26,800	-19,800	7,000	114	.620	.71	A.
September.....	492	97	250	14,900	-6,420	8,500	143	.778	.87	B.
The period.....	.....	.....	.....	.....	.....	500,000	.....	.....	.....	.....
1910-11.										
October.....	1,150	114	753	46,300	+6,440	52,700	857	4.66	5.37	A.
November.....	3,220	336	1,280	76,200	+13,200	89,400	1,500	8.16	9.10	A.
December.....	1,120	424	646	39,700	-7,440	32,300	525	2.85	3.29	A.
January.....	655	348	500	30,700	+2,820	33,500	545	2.96	3.41	A.
February.....	370	184	268	14,900	-1,650	13,200	238	1.29	1.34	A.
March.....	920	202	396	24,300	+3,510	27,800	452	2.46	2.84	A.
April.....	1,420	620	828	49,300	+1,330	50,600	850	4.62	5.16	A.
May.....	2,090	803	1,330	81,800	+6,590	88,400	1,440	7.83	9.03	A.
June.....	2,580	551	1,140	67,800	+6,050	73,800	1,240	6.74	7.52	A.
July.....	1,220	443	568	34,900	-9,460	25,400	413	2.24	2.58	A.
August.....	728	220	522	32,100	-19,800	12,300	200	1.09	1.26	A.
September.....	1,220	99	583	34,700	-13,500	21,200	356	1.93	2.15	A.
The year.....	3,220	99	735	533,000	-11,900	521,000	721	3.92	53.05	.....
1911-12.										
October.....	67	37	50.7	3,120	+7,880	11,000	179	.973	1.12	.....
November.....	5,900	59	1,170	69,600	+25,100	94,700	1,590	8.64	9.64	B.
December.....	5,500	495	1,050	64,600	-15,000	49,600	807	4.38	5.05	A.
January.....	1,810	303	800	49,200	+690	49,900	812	4.41	5.08	A.
February.....	1,350	295	844	48,500	-10,200	38,300	666	3.62	3.90	A.
March.....	801	177	536	33,000	-12,100	20,900	340	1.85	2.13	A.
April.....	1,450	801	1,030	61,300	-1,500	59,800	1,010	5.49	6.12	A.
May.....	3,220	910	1,900	117,000	+36,000	153,000	2,490	13.5	15.56	A.
June.....	2,310	1,000	1,610	95,800	+1,060	96,900	1,630	8.86	9.88	A.
July.....	1,280	282	519	31,900	-3,580	28,300	460	2.50	2.83	A.
August.....	1,430	493	879	54,000	-35,700	18,300	298	1.62	1.87	A.
September.....	868	60	402	23,900	-10,500	13,400	225	1.22	1.36	B.
The year.....	5,900	37	898	652,000	-17,800	634,000	874	4.75	64.59	.....

Monthly discharge of Yakima River at Easton—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge without storage, second-feet.		Depth in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1912-13.										
October.....	505	210	309	19,000	-2,610	16,400	267	1.45	1.67	A.
November.....	1,700	282	687	40,900	-1,120	39,800	669	3.64	4.06	B.
December.....	980	249	727	44,700	-15,600	29,100	473	2.57	2.96	A.
January.....	1,130	405	751	46,200	-8,710	37,500	610	3.32	3.83	A.
February.....	1,450	448	782	43,500	-2,380	41,100	740	4.02	4.19	A.
March.....	840	405	653	40,200	-7,180	33,000	537	2.92	3.37	A.
April.....	1,530	405	886	52,700	+15,900	68,600	1,150	6.25	6.97	A.
May.....	3,120	875	1,860	114,000	+20,700	135,000	2,200	12.0	13.83	A.
June.....	3,480	1,130	1,810	108,000	+31,800	140,000	2,350	12.8	14.28	A.
July.....	1,130	472	722	44,400	+11,500	55,900	909	4.94	5.70	A.
August.....	472	104	290	17,800	-1,020	16,800	273	1.48	1.71	A.
September.....	775	25	348	20,700	-8,290	12,400	208	1.13	1.26	B.
The year....	3,480	25	818	592,000	+33,000	626,000	865	4.70	63.83	
1913-14.										
October.....	1,610	657	1,210	74,400	-43,100	31,300	509	2.77	3.19	A.
November.....	810	268	540	32,100	+4,700	36,800	618	3.36	3.75	A.
December.....	680	321	478	29,400	-7,800	21,600	351	1.91	2.20	A.
January.....	1,450	233	607	37,300	+10,200	47,500	773	4.20	4.84	A.
February.....	495	334	388	21,600	-3,220	18,400	331	1.80	1.87	A.
March.....	1,020	292	636	39,100	+16,500	55,600	904	4.91	5.66	A.
April.....	1,370	595	959	57,000	+30,400	87,400	1,470	7.99	8.91	A.
May.....	2,560	774	1,610	99,000	+14,600	114,000	1,850	10.1	11.64	A.
June.....	1,310	292	909	54,100	+1,960	56,100	943	5.12	5.71	A.
July.....	809	328	599	36,800	-20,500	16,300	265	1.44	1.66	A.
August.....	1,070	423	920	56,600	-49,700	6,900	112	.609	.70	A.
September.....	990	423	693	41,200	-34,200	7,000	118	.641	.72	B.
The year....	2,560	233	799	579,000	-80,200	499,000	689	3.74	50.85	
1914-15.										
October.....	997	142	484	29,700	-12,700	17,000	276	1.50	1.73	B.
November.....	1,600	643	871	51,800	+6,880	58,700	936	5.36	5.98	B.
December.....	646	168	354	21,800	-5,000	16,800	273	1.48	1.71	B.
January.....	366	105	160	9,850	+2,360	12,200	198	1.08	1.24	C.
February.....	130	93	108	5,980	+4,750	10,700	193	1.05	1.09	B.
March.....	4,010	98	670	41,200	-1,400	39,800	647	3.52	4.06	B.
April.....	2,570	511	1,060	63,000	+30,600	93,600	1,570	8.53	9.52	A.
May.....	477	113	309	19,000	+20,200	39,200	638	3.47	4.00	A.
June.....	1,110	72	536	31,900	-12,700	19,200	323	1.76	1.96	A.
July.....	1,110	707	968	59,500	-48,700	10,800	176	.957	1.10	A.
August.....	630	148	316	19,400	-16,100	3,300	53.7	.292	.34	A.
September.....	142	38	97.8	5,820	-1,670	4,150	69.7	.379	.42	B.
The year....	4,010	38	496	359,000	-33,500	325,000	449	2.44	33.15	

NOTE.—Maximum discharge during period of record, 7,280 second-feet at 7 p. m. Mar. 26, 1915; minimum discharge estimated at 25 second-feet, Sept. 22, 1913, when gates of Keechelus and Kachess reservoirs were closed.

Yearly discharge of Yakima River at Easton.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1911.....	3,220	99	200	Aug.....	721	3.92	53.05	521,000
1912.....	5,900	37	179	Oet.....	874	4.75	64.59	634,000
1913.....	3,480	25	208	Sept.....	865	4.70	63.83	626,000
1914.....	2,560	233	112	Aug.....	689	3.74	50.85	499,000
1915.....	4,010	38	53.7	Aug.....	449	2.44	33.15	325,000
The period...	5,900	25	53.7	Aug., 1915.	720	3.91	53.09	521,000

YAKIMA RIVER AT CLE ELUM (110).

Friez water-stage recorder at highway bridge at Cle Elum, just above Roslyn Creek and 3 miles below Cle Elum River, in Kittitas County. Prior to July 12, 1911, staff or chain gages read once or twice daily.

Flow controlled by regulation in Keechelus, Kachess, and Cle Elum reservoirs. Monthly discharge without storage, determined from records of stage at reservoirs.

Drainage area, 500 square miles; measured on topographic maps.

Monthly discharge of Yakima River at Cle Elum.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1906.										
August 24-30.....	505	472	501	7,950						
September.....	505	440	484	28,800	-2,490	26,300	442	0.884	0.99	A.
The period.....										
1906-7.										
October.....	6,620	472	1,420	87,300	+13,000	100,000	1,630	3.26	3.76	A.
November.....	^a 25,600	981	5,580	332,000	+5,200	337,000	5,660	11.3	12.61	B.
December.....			1,400	86,000	-3,630	82,400	1,340	2.68	3.09	B.
January.....	1,640	713	1,060	65,200	-5,620	59,600	969	1.94	2.24	A.
February.....	3,790	688	1,920	107,000	+4,160	111,000	2,000	4.00	4.16	A.
March.....	1,850	970	1,310	80,600	-7,250	73,400	1,190	2.38	2.74	A.
April.....	4,010	1,020	2,430	145,000	+17,900	163,000	2,740	5.48	6.11	A.
May.....	8,860	3,350	6,570	404,000	+16,500	420,000	6,830	13.7	15.79	A.
June.....	7,950	1,780	3,350	199,000	-396	199,000	3,340	6.68	7.45	A.
July.....	2,060	569	1,170	71,900	-2,970	68,900	1,120	2.24	2.58	A.
August.....	779	394	644	39,600	-10,100	29,500	480	.960	1.11	A.
September.....	765	408	593	35,300	-9,720	25,600	430	.860	.96	A.
The year.....	^a 25,600	394	2,280	1,650,000	+17,100	1,670,000	2,310	4.62	62.60	
1907-8.										
October.....	536	357	445	27,400	-11,400	16,000	260	.520	.60	A.
November.....	1,210	332	519	30,900	+11,400	42,300	711	1.42	1.58	A.
December.....	1,520	910	1,220	75,000	+2,130	77,100	1,250	2.50	2.88	A.
January.....	1,180	592	858	52,800	-10,900	41,900	681	1.36	1.57	A.
February.....	682	510	565	32,500	-1,130	31,400	546	1.09	1.18	A.
March.....	5,350	452	2,180	134,000	+40,500	174,000	2,830	5.66	6.52	A.
April.....	7,360	1,670	3,460	206,000	+4,170	210,000	3,530	7.06	7.88	A.
May.....	5,980	3,510	4,760	293,000	+8,690	302,000	4,910	9.82	11.32	A.
June.....	9,480	2,800	5,290	315,000	+542	316,000	5,310	10.6	11.83	A.
July.....	5,620	1,140	3,050	188,000	-4,080	184,000	2,990	5.98	6.89	A.
August.....	1,360	910	1,080	66,400	-21,200	45,200	735	1.47	1.70	A.
September.....	1,210	439	783	46,600	-23,000	23,600	397	.794	.89	A.
The year.....	9,480	332	2,020	1,470,000	-4,280	1,460,000	2,020	4.04	54.84	
1908-9.										
October.....	610	280	441	27,100	+1,570	28,700	467	.934	1.08	A.
November.....	1,520	368	712	42,400	+23,000	65,400	1,100	2.20	2.46	A.
December.....	1,000	485	650	40,000	+3,390	43,400	706	1.41	1.63	A.
January.....	965	598	755	46,400	-1,000	45,400	738	1.48	1.71	A.
February.....	848	478	609	33,800	-370	33,400	601	1.20	1.25	A.
March.....	1,750	554	890	54,700	+2,940	57,600	937	1.87	2.16	A.
April.....	3,490	1,330	2,080	124,000	+4,720	129,000	2,170	4.34	4.84	A.
May.....	6,300	2,920	3,820	235,000	+7,580	243,000	3,950	7.90	9.11	A.
June.....	9,720	2,560	5,080	302,000	+4,260	306,000	5,140	10.3	11.49	A.
July.....	2,780	1,160	1,780	109,000	-6,440	103,000	1,680	3.36	3.87	A.
August.....	1,240	864	1,120	68,900	-33,100	35,800	582	1.16	1.34	A.
September.....	988	461	672	40,000	-11,500	28,500	479	.958	1.07	A.
The year.....	9,720	280	1,550	1,120,000	-4,950	1,120,000	1,550	3.10	42.01	

^a Estimated from high-water marks.

Monthly discharge of Yakima River at Cle Elum—Continued

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1909-10.										
October.....	579	425	495	30,400	-1,580	28,800	468	0.936	1.08	A.
November.....	17,300	495	4,740	282,000	+65,600	348,000	5,850	11.7	13.05	A.
December.....	12,700	1,510	3,060	188,000	-36,300	152,000	2,470	4.94	5.70	A.
January.....	1,620	922	1,260	77,500	-5,680	71,800	1,170	2.34	2.70	A.
February.....	1,420	938	1,080	60,000	-490	59,500	1,070	2.14	2.23	A.
March.....	8,100	1,450	3,820	235,000	+18,700	254,000	4,130	8.26	9.52	A.
April.....	11,600	2,740	4,960	295,000	+7,020	302,000	5,080	10.2	11.38	A.
May.....	10,000	3,900	5,600	344,000	-2,520	341,000	5,550	11.1	12.80	A.
June.....	4,480	1,350	2,520	150,000	-540	149,000	2,500	5.00	5.58	A.
July.....	1,330	785	1,080	66,400	-510	65,900	1,070	2.14	2.47	A.
August.....	1,490	800	1,050	64,600	-41,200	23,400	381	.762	.88	A.
September.....	804	330	514	30,600	-7,450	23,000	387	.774	.86	A.
The year....	17,300	330	2,520	1,820,000	-4,950	1,820,000	2,510	5.02	68.25	
1910-11.										
October.....	2,390	338	1,670	103,000	+20,700	124,000	2,020	4.04	4.66	A.
November.....	10,000	1,340	3,000	179,000	+18,300	197,000	3,310	6.62	7.39	A.
December.....	2,390	1,040	1,530	94,100	-23,400	70,700	1,150	2.30	2.65	A.
January.....	1,220	680	910	56,000	+12,900	68,900	1,120	2.24	2.58	A.
February.....	692	470	564	31,300	+1,230	32,500	585	1.17	1.22	A.
March.....	2,420	428	1,010	62,100	+10,600	72,700	1,180	2.36	2.72	A.
April.....	3,920	1,560	2,280	136,000	+2,770	139,000	2,340	4.68	5.22	A.
May.....	5,120	2,560	3,560	219,000	+8,270	227,000	3,690	7.38	8.51	A.
June.....	7,380	2,020	3,870	230,000	+3,290	233,000	3,920	7.84	8.75	A.
July.....	1,960	1,030	1,530	94,100	-17,800	76,300	1,240	2.48	2.86	A.
August.....	1,560	752	1,010	62,100	-33,200	28,900	470	.940	1.08	A.
September.....	846	196	667	39,700	+1,240	40,900	687	1.37	1.53	A.
The year....	10,000	196	1,800	1,310,000	+4,900	1,310,000	1,810	3.62	49.17	
1911-12.										
October.....	604	269	488	30,000	-8,920	21,100	343	.686	.79	
November.....	9,410	242	2,410	143,000	+44,700	188,000	3,160	6.32	7.05	A.
December.....	2,280	1,120	1,560	95,900	-12,800	83,100	1,350	2.70	3.11	A.
January.....	2,630	742	1,480	91,000	+1,650	92,600	1,510	3.02	3.48	A.
February.....	2,270	1,260	1,680	96,600	-11,400	85,200	1,480	2.96	3.19	A.
March.....	1,770	615	1,050	64,600	-10,700	53,900	877	1.75	2.02	A.
April.....	3,410	1,900	2,500	149,000	+60	149,000	2,500	5.00	5.58	A.
May.....	8,650	2,940	5,180	319,000	+36,600	355,000	5,770	11.5	13.26	A.
June.....	5,840	2,640	4,030	240,000	-495	240,000	4,030	8.06	8.99	A.
July.....	2,440	1,020	1,320	81,200	-5,860	75,300	1,220	2.44	2.81	A.
August.....	1,730	1,020	1,270	78,100	-43,400	34,700	564	1.13	1.30	A.
September.....	1,310	500	889	52,900	-23,700	29,200	491	.982	1.10	A.
The year....	9,410	242	1,980	1,440,000	-34,300	1,410,000	1,940	3.88	52.68	
1912-13.										
October.....	664	366	513	31,500	+2,970	34,500	561	1.12	1.29	A.
November.....	1,700	446	1,080	64,300	+1,500	65,800	1,110	2.22	2.48	A.
December.....	1,320	515	1,040	64,000	-2,420	61,600	1,000	2.00	2.31	A.
January.....	1,890	790	1,300	80,100	-8,230	71,900	1,170	2.34	2.70	A.
February.....	2,900	760	1,500	83,300	-2,480	80,800	1,450	2.90	3.02	A.
March.....	1,890	1,130	1,530	94,300	-24,300	70,000	1,140	2.28	2.63	A.
April.....	4,840	860	2,420	144,000	+35,100	179,000	3,010	6.02	6.72	A.
May.....	9,310	2,520	5,500	338,000	+25,000	363,000	5,900	11.8	13.60	A.
June.....	11,300	3,900	6,270	373,000	+29,100	402,000	6,760	13.5	15.06	A.
July.....	4,100	1,600	2,810	173,000	+8,970	182,000	2,960	5.92	6.82	A.
August.....	1,500	766	1,050	64,500	-13,600	50,900	828	1.66	1.91	A.
September.....	1,500	475	915	54,500	-16,900	37,600	632	1.26	1.41	A.
The year....	11,300	366	2,160	1,560,000	+34,700	1,600,000	2,210	4.42	59.95	

Monthly discharge of Yakima River at Cle Elum—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1913-14.										
October.....	2,450	1,220	1,860	114,000	-40,100	73,900	1,200	2.40	2.77	A.
November.....	1,660	428	976	58,000	+22,100	80,100	1,360	2.72	3.04	A.
December.....	1,550	676	1,210	74,400	-27,100	47,300	769	1.54	1.78	A.
January.....	2,520	637	1,450	89,300	+12,200	102,000	1,660	3.32	3.83	A.
February.....	1,130	615	834	46,300	-2,040	44,300	798	1.60	1.67	A.
March.....	2,820	718	1,670	103,000	+28,100	131,000	2,130	4.26	4.91	A.
April.....	5,060	1,960	3,360	200,000	+34,900	235,000	3,950	7.90	8.81	A.
May.....	6,800	2,980	4,750	292,000	+16,500	308,000	5,010	10.0	11.53	A.
June.....	4,420	1,720	2,770	165,000	+1,020	166,000	2,790	5.58	6.23	A.
July.....	2,230	1,260	1,610	99,200	-25,900	73,300	1,190	2.38	2.74	A.
August.....	1,720	895	1,480	91,300	-64,900	26,400	429	.858	.99	A.
September.....	1,450	670	985	58,600	-32,000	26,600	447	.894	1.00	A.
The year.....	6,800	428	1,920	1,390,000	-77,200	1,310,000	1,810	3.62	49.30	
1914-15.										
October.....	1,780	361	914	56,200	-7,620	48,600	790	1.58	1.82	A.
November.....	3,430	889	2,090	124,000	+17,700	142,000	2,390	4.78	5.33	A.
December.....	1,890	529	955	58,700	-10,100	48,600	790	1.58	1.82	B.
January.....	663	348	434	26,700	-459	26,200	426	.852	.98	B.
February.....	327	267	294	16,300	+5,200	21,500	387	.774	.81	A.
March.....	5,900	331	1,340	82,400	+8,400	90,900	1,480	2.96	3.41	A.
April.....	6,360	1,780	3,160	188,000	+29,500	218,000	3,660	7.32	8.17	A.
May.....	1,890	1,060	1,430	87,900	+19,800	108,000	1,760	3.52	4.06	A.
June.....	1,780	579	1,300	77,400	-22,900	54,500	916	1.83	2.04	A.
July.....	1,780	1,100	1,430	87,900	-56,600	31,300	509	1.02	1.18	A.
August.....	1,060	403	628	38,600	-17,500	21,100	343	.686	.79	A.
September.....	388	199	286	17,000	-2,800	14,200	239	.478	.53	A.
The year.....	6,360	199	1,190	861,000	-37,300	825,000	1,140	2.28	30.94	
1915-16.										
October.....	1,300	202	494	30,400	+18,500	48,900	795	1.59	1.83	A.
November.....	1,590	812	1,120	66,600	+12,200	78,800	1,320	2.64	2.94	A.
December.....	1,260	675	856	52,600	+12,200	64,800	1,050	2.10	2.42	A.
January.....	.....	.....	715	44,000	-2,590	41,400	673	1.35	1.56	C.
February.....	.....	.....	663	38,100	+9,550	48,600	845	1.69	1.82	C.
March.....	5,210	.....	2,580	159,000	+38,700	198,000	3,220	6.44	7.42	B.
April.....	5,020	2,420	3,610	215,000	+32,100	247,000	4,150	8.30	9.26	A.
May.....	8,620	3,400	5,140	316,000	+45,000	361,000	5,870	11.7	13.49	A.
June.....	10,880	4,360	6,540	389,000	+62,000	451,000	7,580	15.2	16.96	A.
July.....	6,470	2,630	4,550	280,000	+973	281,000	4,570	9.14	10.54	A.
August.....	2,780	1,160	1,830	113,000	-23,900	89,100	1,450	2.90	3.34	A.
September.....	1,760	853	1,450	86,500	-48,800	37,700	634	1.27	1.42	A.
The year.....	10,800	202	2,460	1,790,000	+156,000	1,950,000	2,690	5.38	73.00	
1916-17.										
October.....	853	707	746	45,800	-22,100	23,700	385	.770	.89	A.
November.....	1,080	350	666	39,600	+1,730	41,300	694	1.39	1.55	A.
December.....	1,080	503	817	50,200	-14,400	35,800	582	1.16	1.34	A.
January.....	809	327	587	36,100	+16,500	52,600	855	1.71	1.97	A.
February.....	910	551	742	41,200	+32,000	73,200	1,320	2.64	2.75	A.
March.....	738	441	554	34,100	+10,700	44,800	729	1.46	1.68	A.
April.....	2,190	524	1,400	83,100	+12,200	95,300	1,600	3.20	3.57	A.
May.....	9,820	2,120	4,930	303,000	+51,300	354,000	5,760	11.5	13.26	A.
June.....	9,280	5,010	6,660	396,000	+20,900	417,000	7,010	14.0	15.62	A.
July.....	7,050	1,830	4,320	265,000	+3,930	269,000	4,370	8.74	10.08	A.
August.....	2,680	1,680	2,150	132,000	-74,700	57,300	932	1.86	2.14	B.
September.....	1,940	726	1,260	74,900	-48,100	26,800	450	.900	1.00	B.
The year.....	9,820	327	2,070	1,500,000	-10,000	1,490,000	2,060	4.12	55.85	

Monthly discharge of Yakima River at Cle Elum—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1917-18.										
October.....	1,180	421	763	46,900	-25,000	21,900	356	0.712	0.82	B.
November.....	1,550	286	903	53,700	-24,500	29,200	491	.982	1.10	B.
December.....	17,700	694	5,010	308,000	+139,000	447,000	7,270	14.5	16.72	B.
January.....	13,000	1,550	5,170	318,000	-34,800	283,000	4,610	9.22	10.63	A.
February.....	1,660	717	1,050	58,300	+27,700	86,000	1,550	3.10	3.23	A.
March.....	1,490	527	735	45,200	+19,600	64,800	1,050	2.10	2.42	A.
April.....	4,380	1,290	2,370	141,000	+38,600	180,000	3,020	6.04	6.74	A.
May.....	5,900	2,060	3,470	213,000	+28,700	242,000	3,940	7.88	9.08	A.
June.....	6,530	2,120	4,110	245,000	-1,250	244,000	4,100	8.20	9.15	A.
July.....	2,380	1,600	2,020	124,000	-47,900	76,100	1,240	2.48	2.86	A.
August.....	2,580	1,820	2,310	142,000	-99,500	42,500	691	1.38	1.59	A.
September.....	2,120	989	1,660	98,800	-77,400	21,400	360	.720	.80	A.
The year....	17,700	286	2,480	1,790,000	-56,800	1,740,000	2,400	4.80	65.14	
1918-19.										
October.....	1,390	516	784	48,200	+23,300	71,500	1,160	2.32	2.68	A.
November.....	1,760	611	1,100	65,200	+5,590	70,800	1,190	2.38	2.66	A.
December.....	6,530	827	2,490	153,000	+33,900	187,000	3,040	6.08	7.01	A.
January.....	4,290	582	1,430	88,200	+43,600	132,000	2,150	4.30	4.96	A.
February.....	1,940	791	1,180	65,600	-5,690	59,900	1,080	2.16	2.25	A.
March.....	2,260	629	1,130	69,200	-4,180	65,000	1,060	2.12	2.44	A.
April.....	4,480	2,260	2,940	175,000	+36,900	212,000	3,560	7.12	7.94	A.
May.....	8,430	2,580	4,540	279,000	+36,300	315,000	5,120	10.2	11.76	A.
June.....	4,200	2,260	3,150	187,000	+46,300	233,000	3,920	7.84	8.75	A.
July.....	2,640	1,880	2,190	134,000	-11,600	122,000	1,980	3.96	4.56	A.
August.....	2,850	2,380	2,680	165,000	-124,000	41,000	667	1.33	1.53	A.
September.....	2,450	784	1,350	80,200	-54,600	25,600	430	.860	.96	A.
The year....	8,430	516	2,090	1,510,000	+25,800	1,530,000	2,120	4.24	57.50	

NOTE.—Maximum discharge during period of record, about 25,600 second-feet, Nov. 14, 1906; minimum discharge, 192 second-feet at 6 p. m. Sept. 30, 1915.
 Monthly discharge for November and December, 1906, estimated from combined flow at headwater gaging stations.

Yearly discharge of Yakima River at Cle Elum.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1907.....	25,600	394	430	Sept.....	2,310	4.62	62.60	1,670,000
1908.....	9,480	332	260	Oct.....	2,020	4.04	54.84	1,460,000
1909.....	9,720	280	467	Oct.....	1,550	3.10	42.01	1,120,000
1910.....	17,300	330	381	Aug.....	2,510	5.02	68.25	1,820,000
1911.....	10,000	196	470	Aug.....	1,810	3.62	49.17	1,310,000
1912.....	9,410	242	343	Oct.....	1,940	3.88	52.68	1,410,000
1913.....	11,300	366	561	Oct.....	2,210	4.42	59.95	1,600,000
1914.....	6,800	428	429	Aug.....	1,810	3.62	49.30	1,310,000
1915.....	6,360	199	239	Sept.....	1,140	2.28	30.94	825,000
1916.....	10,800	202	634	Sept.....	2,690	5.38	73.00	1,950,000
1917.....	9,820	327	385	Oct.....	2,060	4.12	55.85	1,490,000
1918.....	17,700	286	356	Oct.....	2,400	4.80	65.14	1,740,000
1919.....	8,430	516	430	Sept.....	2,120	4.24	57.50	1,530,000
The period....	25,600	196	239	Sept., 1915.	2,040	4.09	55.48	1,480,000

YAKIMA RIVER AT UMTANUM (111).

Water-stage recorders at Umtanum half a mile above Umtanum Creek and 10 miles south of Ellensburg, in Kittitas County. Vertical staff or cantilever chain gages, read once or twice daily, in use prior to September 28, 1911.

Water diverted above gage for irrigation of about 40,000 acres. Flow partly controlled by regulation in Keechelus, Kachess, and Cle Elum reservoirs.

Drainage area, 1,620 square miles (revised); measured on topographic maps and Plate I, Water-Supply Paper 369.

Monthly discharge of Yakima River at Umtanum.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1906.					
August 25-31.....	369	290	326	4,530	A.
September.....	502	302	368	21,900	
The period.....					
1906-7.					
October.....	6,080	470	1,370	84,200	A.
November.....	41,000	1,260	8,980	534,000	C.
December.....	4,660	1,690	2,570	158,000	A.
January.....			1,590	97,800	C.
February.....	5,470		3,490	194,000	B.
March.....	4,200	1,900	2,740	168,000	A.
April.....	8,010	1,740	4,450	265,000	A.
May.....		5,060	8,420	518,000	B.
June.....			3,520	209,000	B.
July.....			1,170	71,900	B.
August.....	770	398	577	35,500	A.
September.....	850	494	691	41,100	A.
The year.....	41,000	398	3,280	2,380,000	
1907-8.					
October.....	676	478	554	34,100	A.
November.....	1,360	494	676	40,200	A.
December.....	1,900	1,130	1,480	91,000	A.
January.....	1,500	910	1,160	71,300	A.
February.....	1,030	790	880	50,600	A.
March.....	9,290	910	3,440	212,000	A.
April.....	9,660	2,460	4,740	282,000	A.
May.....	6,970	4,450	5,730	352,000	A.
June.....	9,660	3,100	5,400	321,000	A.
July.....	5,200	1,260	3,060	188,000	A.
August.....	1,200	810	979	60,200	A.
September.....	1,130	510	770	45,800	A.
The year.....	9,660	478	2,410	1,750,000	
1908-9.					
October.....	712	390	510	31,400	A.
November.....	1,640	542	864	51,400	A.
December.....	1,130	658	813	50,000	A.
January.....			886	54,500	C.
February.....	2,030		942	52,300	B.
March.....	2,790	850	1,350	83,000	A.
April.....	4,260	2,030	2,840	169,000	A.
May.....	7,180	3,370	5,060	311,000	A.
June.....	10,300	2,380	5,420	323,000	A.
July.....	2,530	950	1,640	101,000	A.
August.....	1,060	750	900	55,300	A.
September.....	750	410	547	32,500	B.
The year.....	10,300	390	1,820	1,310,000	
1909-10.					
October.....	705	490	583	35,800	B.
November.....	24,500	678	6,880	409,000	B.
December.....	18,700	1,510	3,820	235,000	B.
January.....	2,680	990	1,500	92,200	B.
February.....	1,890	990	1,320	73,300	B.
March.....	16,700	3,520	7,840	482,000	B.
April.....	15,000	4,650	7,420	442,000	A.
May.....	11,400	4,260	6,800	418,000	A.
June.....	4,910	1,280	2,690	160,000	A.
July.....	1,240	604	992	61,000	A.
August.....	1,270	622	917	56,400	A.
September.....	765	358	503	29,900	A.
The year.....	24,500	358	3,450	2,490,000	

Monthly discharge of Yakima River at Umtanum—Continued

Month.	Observed discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1910-11.					
October.....	2,510	365	1,590	97,800	B.
November.....	10,200	1,600	3,340	199,000	A.
December.....	2,930	1,490	2,000	123,000	A.
January.....	1,350	825	1,170	71,900	B.
February.....	815	577	669	37,200	B.
March.....	3,250	568	1,560	95,900	B.
April.....	4,670	1,420	2,720	162,000	A.
May.....	5,330	2,650	3,810	234,000	A.
June.....	7,330	2,000	4,070	242,000	B.
July.....	2,000	1,060	1,440	88,500	A.
August.....	1,100	630	837	51,500	A.
September.....	1,050	359	818	48,700	A.
The year.....	10,200	359	2,000	1,450,000	
1911-12.					
October.....	725	413	622	38,200	A.
November.....	11,600	427	2,690	160,000	A.
December.....	2,600	1,500	1,920	118,000	A.
January.....	3,440	970	1,860	114,000	A.
February.....	3,440	1,880	2,460	142,000	A.
March.....	2,380	1,150	1,510	92,800	A.
April.....	5,920	3,260	3,910	233,000	A.
May.....	10,700	4,050	6,780	417,000	A.
June.....	5,830	2,820	4,180	249,000	A.
July.....	2,680	970	1,320	81,200	A.
August.....	1,340	1,070	1,160	71,300	A.
September.....	1,460	500	958	57,000	A.
The year.....	11,600	413	2,440	1,770,000	
1912-13.					
October.....	850	450	596	36,600	A.
November.....	2,030	690	1,390	82,700	A.
December.....	1,610	930	1,330	81,800	A.
January.....	2,450	1,040	1,650	101,000	A.
February.....	4,670	1,100	2,170	121,000	A.
March.....	2,870	1,570	2,250	138,000	A.
April.....	7,620	1,840	4,160	248,000	B.
May.....	11,900	3,500	6,980	429,000	B.
June.....	13,100	4,180	7,130	424,000	B.
July.....	4,180	1,440	2,500	154,000	A.
August.....	1,570	700	975	60,000	A.
September.....	1,440	498	865	51,500	B.
The year.....	13,100	450	2,660	1,930,000	
1913-14.					
October.....	2,500	690	1,710	105,000	B.
November.....	1,840	745	1,200	71,600	B.
December.....	1,840	940	1,440	88,500	B.
January.....	2,870	745	1,640	101,000	B.
February.....	2,150	990	1,210	67,300	B.
March.....	4,670	1,570	2,920	180,000	B.
April.....	6,340	2,680	4,590	273,000	B.
May.....	7,500	3,070	5,160	318,000	B.
June.....	4,730	1,950	2,880	171,000	B.
July.....	2,110	1,280	1,590	97,600	A.
August.....	1,600	1,220	1,440	88,500	A.
September.....	1,280	1,010	1,150	68,500	B.
The year.....	7,500	690	2,250	1,630,000	
1914-15.					
October.....	1,840	487	1,080	66,400	A.
November.....	3,620	1,140	2,500	149,000	A.
December.....	2,300	795	1,420	87,300	B.
January.....	1,160	514	678	41,700	B.
February.....	970	478	605	33,600	B.
March.....	5,400	1,020	2,180	134,000	A.
April.....	9,310	1,910	4,320	257,000	A.
May.....	2,060	1,250	1,640	101,000	A.
June.....	1,580	662	1,150	68,400	A.
July.....	1,580	961	1,230	75,600	A.
August.....	931	284	483	29,700	A.
September.....	306	167	208	12,400	B.
The year.....	9,310	167	1,460	1,060,000	

Monthly discharge of Yakima River at Umtanum—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	1,340	139	486	29,900	A.
November 1-15.....	1,640	1,180	1,350	40,300	A.
April.....	9,370	4,760	6,980	415,000	A.
May.....	13,700	5,030	7,850	482,000	A.
June.....	12,500	6,170	8,440	502,000	A.
July.....	8,710	2,600	5,480	337,000	A.
August.....	2,600	1,070	1,730	106,000	A.
September.....	1,860	977	1,450	86,500	A.
1916-17.					
October.....	955	714	815	50,100	A.
April.....	4,250	870	2,430	145,000	A.
May.....	12,900	3,640	7,290	448,000	A.
June.....	11,800	6,170	7,970	474,000	A.
July.....	7,580	2,020	4,630	285,000	A.
August.....	2,150	1,550	2,030	125,000	A.
September.....	1,890	686	1,360	81,000	A.
1917-18.					
October.....	1,080	536	805	49,500	A.
November.....	601	501	559	14,400	A.
April.....	6,640	2,610	3,910	233,000	A.
May.....	7,580	2,410	4,490	276,000	A.
June.....	7,420	2,370	4,680	278,000	A.
July.....	2,240	1,490	1,880	116,000	A.
August.....	2,410	1,660	2,090	129,000	A.
September.....	1,840	974	1,490	88,700	A.
1918-19.					
October.....	1,960	630	883	54,300	A.
November 1-23.....	1,940	820	1,400	63,900	A.
April.....	6,680	3,370	4,690	279,000	A.
May.....	9,620	3,040	5,390	331,000	A.
June.....	5,280	2,370	3,370	200,000	A.
July.....	2,370	1,680	1,920	118,000	A.
August.....	2,460	1,820	2,230	137,000	A.
September.....	2,120	781	1,300	77,300	A.

NOTE.—Maximum discharge, during period of record, about 41,000 second-feet Nov. 15 or 16, 1906, estimated from high-water marks; minimum discharge, 138 second-feet at 7 p. m. Oct. 3, 1915.

Gage-height record lacking May 20 to Aug. 9, 1907, discharge estimated by comparison with records of Yakima River at Cle Elum.

Yearly discharge of Yakima River at Umtanum.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1907.....	41,000	398	577	Aug.....	3,280	2,380,000
1908.....	9,660	478	554	Oct.....	2,410	1,750,000
1909.....	10,300	390	510	Oct.....	1,820	1,310,000
1910.....	24,500	358	503	Sept.....	3,450	2,490,000
1911.....	10,200	359	669	Feb.....	2,000	1,450,000
1912.....	11,600	413	622	Oct.....	2,440	1,770,000
1913.....	13,100	450	596	Oct.....	2,660	1,930,000
1914.....	7,500	690	1,150	Sept.....	2,250	1,630,000
1915.....	9,310	167	208	Sept.....	1,460	1,060,000
The period.....	41,000	167	208	Sept., 1915	2,420	1,750,000

YAKIMA RIVER AT SELAH GAP, NEAR NORTH YAKIMA (112).

Wire and staff gages at Selah Gap, one-fourth mile above Naches River and 1½ miles north of North Yakima, in Yakima County.

Many irrigation diversions above gaging station. Flow partly controlled by regulation in Keechelus, Kachess, and Cle Elum reservoirs.

Drainage area, 2,150 square miles (revised); measured on Plate I, Water-Supply Paper 369.

Monthly discharge of Yakima River at Selah Gap, near North Yakima.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1897.					
May 19-31.....	13,850	6,140	9,320	240,000	C.
June.....	6,390	2,880	4,020	239,000	C.
July.....	3,740	1,010	2,060	126,000	C.
August 1-21.....	1,020	644	811	33,800	C.
September.....			^a 700	41,700	D.
October 20-31.....	828	828	828	19,700	C.
November.....	19,800	828	3,980	237,000	C.
December.....	8,570	1,470	2,700	166,000	C.
1904.					
May 9-31.....	9,650	4,820	6,900	315,000	B.
June.....	8,170	3,500	5,700	340,000	B.
July.....	4,120	1,140	2,430	150,000	A.
August.....	1,140	441	663	40,800	A.
September.....	522	285	376	22,400	B.
October.....	690	522	608	37,400	A.
November.....	2,120	522	955	56,800	B.
The period.....				961,000	
1911.					
July.....	2,100	967	1,400	86,100	A.
August.....	1,200	577	748	46,000	A.
September.....	1,010	480	755	44,900	A.
October 1-15.....	680	450	598	17,800	A.
The period.....				195,000	
1912.					
July 7-31.....	1,610	880	1,090	54,000	A.
August.....	1,400	960	1,100	67,600	A.
September.....	1,450	670	991	59,000	A.
The period.....				181,000	

^a Approximate.

YAKIMA RIVER AT UNION GAP, NEAR YAKIMA (113).

Stevens water-stage recorder, July 29, 1912, to September 30, 1914, at Union Gap, 600 feet below Ahtanum Creek, 600 feet above New Reservation canal, and 1 mile south of Yakima, in Yakima County. Staff gages, read once or twice daily, in use prior to July 29, 1912.

Many irrigation diversions above gaging station. Flow partly controlled by regulation in Keechelus, Kachess, Cle Elum, and Bumping reservoirs. Natural flow estimated by correction for storage, diversions, and seepage return.

Drainage area, 3,550 square miles (revised); measured on Plate I, Water-Supply Paper 369.

Monthly discharge of Yakima River at Union Gap, near Yakima.

Month.	Estimated run-off in acre-feet.					Estimated natural discharge in second-feet.		Run-off in inches.	Accuracy of observed discharge.
	Observed.	Stored.	Diver-sion for irrigation.	Seepage return	Natural.	Mean.	Per square mile.		
1896.									
August.....	101,000	.....	42,600	16,800	127,000	2,070	0.583	0.67	B.
September.....	63,700	.....	26,800	11,200	79,300	1,330	.375	.42	B.
The period..	165,000	.....	69,400	28,000	210,000	.....	.....	.....
1896-97.									
October.....	52,900	.....	6,720	5,600	54,000	879	.248	.29	B.
November.....	455,000	.....	.....	.....	455,000	7,650	2.15	2.40	B.
December.....	317,000	.....	.....	.....	317,000	5,160	1.45	1.67	B.
January.....	129,000	.....	.....	.....	129,000	2,100	.592	.68	D.
February.....	167,000	.....	.....	.....	167,000	3,000	.845	.88	D.
March.....	152,000	.....	.....	.....	152,000	2,470	.696	.80	B.
April.....	893,000	.....	13,900	.....	907,000	15,200	4.28	4.78	C.
May.....	964,000	.....	48,700	5,800	1,010,000	16,400	4.62	5.33	C.
June.....	423,000	.....	46,400	11,600	458,000	7,700	2.17	2.42	B.
July.....	202,000	.....	44,100	17,400	229,000	3,720	1.05	1.21	B.
August.....	71,800	.....	44,100	17,400	98,500	1,600	.451	.52	B.
September.....	48,600	.....	27,800	11,600	64,800	1,090	.307	.34	B.
The year...	3,880,000	.....	232,000	69,400	4,040,000	5,580	1.57	21.32	
1897-98.									
October.....	49,800	.....	6,960	5,800	51,000	830	.234	.27	B.
November.....	314,000	.....	.....	.....	314,000	5,270	1.48	1.65	B.
December.....	244,000	.....	.....	.....	244,000	3,970	1.12	1.29	B.
January.....	206,000	.....	.....	.....	206,000	3,350	.944	1.09	B.
February.....	378,000	.....	.....	.....	378,000	6,800	1.92	2.00	B.
March.....	279,000	.....	.....	.....	279,000	4,540	1.28	1.48	B.
April.....	411,000	.....	14,500	.....	426,000	7,160	2.02	2.25	B.
May.....	762,000	.....	50,800	6,050	807,000	13,100	3.69	4.25	C.
June.....	566,000	.....	48,400	12,100	602,000	10,100	2.85	3.18	C.
July.....	214,000	.....	46,000	18,200	242,000	3,940	1.11	1.28	B.
August.....	83,900	.....	46,000	18,200	112,000	1,820	.513	.59	B.
September.....	50,900	.....	29,000	12,100	67,800	1,140	.321	.36	B.
The year..	3,560,000	.....	241,660	72,400	3,730,000	5,150	1.45	19.69	
1898-99.									
October.....	79,900	.....	7,270	6,050	81,100	1,320	.372	.43	B.
November.....	117,000	.....	.....	.....	117,000	1,970	.555	.62	B.
December.....	122,000	.....	.....	.....	122,000	1,990	.561	.65	B.
January.....	287,000	.....	.....	.....	287,000	4,660	1.31	1.51	C.
February.....	265,000	.....	.....	.....	265,000	4,770	1.34	1.40	C.
March.....	171,000	.....	.....	.....	171,000	2,780	.783	.90	B.
April.....	251,000	.....	15,100	.....	266,000	4,470	1.26	1.41	B.
May.....	577,000	.....	52,900	6,300	624,000	10,100	2.85	3.29	B.
June.....	839,000	.....	50,400	12,600	877,000	14,700	4.14	4.62	B.
July.....	521,000	.....	47,800	18,900	550,000	8,940	2.52	2.90	B.
August.....	229,000	.....	47,800	18,900	258,000	4,200	1.18	1.36	B.
September.....	119,000	.....	30,200	12,600	138,000	2,320	.654	.73	B.
The year..	3,580,000	.....	251,000	75,400	3,760,000	5,190	1.46	19.82	
1899-1900.									
October.....	122,000	.....	7,560	6,300	123,000	2,000	.563	.65	B.
November.....	315,000	.....	.....	.....	315,000	5,290	1.49	1.66	B.
December.....	410,000	.....	.....	.....	410,000	6,670	1.88	2.17	B.
January.....	548,000	.....	.....	.....	548,000	8,910	2.51	2.89	D.
February.....	214,000	.....	.....	.....	214,000	3,850	1.08	1.12	B.
March.....	448,000	.....	.....	.....	448,000	7,280	2.07	2.39	B.
April.....	446,000	.....	15,600	.....	462,000	7,760	2.19	2.44	B.
May.....	422,000	.....	54,600	6,500	470,000	7,640	2.15	2.48	B.
June.....	233,000	.....	52,000	13,000	272,000	4,570	1.29	1.44	B.
July.....	106,000	.....	49,400	19,500	136,000	2,210	.623	.72	B.
August.....	57,900	.....	49,400	19,500	87,800	1,430	.403	.46	B.
September.....	66,600	.....	31,200	13,000	84,800	1,430	.403	.45	B.
The year..	3,390,000	.....	260,000	77,800	3,570,000	4,930	1.39	18.87	B.

Monthly discharge of Yakima River at Union Gap near Yakima—Continued.

Month.	Estimated run-off in acre-feet.					Estimated natural discharge in second-feet.		Run-off in inches.	Accuracy of observed discharge.
	Observed.	Stored.	Diver-sion for irrigation.	Seepage return.	Natural.	Mean.	Per square mile.		
1900-1901.									
October.....	139,000	.....	7,800	6,500	140,000	2,280	0.642	0.74	B.
November.....	213,000	.....	.....	.....	213,000	3,580	1.01	1.13	B.
December.....	427,000	.....	.....	.....	427,000	6,950	1.96	2.26	B.
January.....	271,000	.....	.....	.....	271,000	4,400	1.24	1.43	B.
February.....	210,000	.....	.....	.....	210,000	3,780	1.06	1.10	B.
March.....	516,000	.....	.....	.....	516,000	8,390	2.36	2.72	B.
April.....	302,000	.....	16,200	.....	318,000	5,340	1.50	1.67	B.
May.....	701,000	.....	56,700	6,750	751,000	12,200	3.44	3.97	B.
June.....	505,000	.....	54,000	13,500	546,000	9,180	2.59	2.89	B.
July.....	272,000	.....	51,300	20,200	303,000	4,930	1.39	1.60	B.
August.....	109,000	.....	51,300	20,200	140,000	2,280	.642	.74	B.
September.....	71,400	.....	32,400	13,500	90,300	1,520	.428	.48	B.
The year..	3,740,000	.....	270,000	80,600	3,930,000	5,420	1.53	20.73	
1901-2.									
October.....	65,800	.....	8,100	6,750	67,200	1,090	.307	.35	B.
November.....	170,000	.....	.....	.....	170,000	2,860	.806	.90	B.
December.....	347,000	.....	.....	.....	347,000	5,650	1.59	1.83	B.
January.....	295,000	.....	.....	.....	295,000	4,800	1.35	1.56	C.
February.....	193,000	.....	.....	.....	193,000	3,480	.980	1.02	B.
March.....	223,000	.....	.....	.....	223,000	3,620	1.02	1.18	B.
April.....	383,000	.....	16,800	.....	400,000	6,720	1.89	2.11	B.
May.....	806,000	.....	58,800	7,000	858,000	14,000	3.94	4.54	C.
June.....	464,000	.....	56,000	14,000	506,000	8,500	2.39	2.67	C.
July.....	249,000	.....	53,200	21,000	281,000	4,570	1.29	1.49	B.
August.....	100,000	.....	53,200	21,000	132,000	2,150	.606	.70	B.
September.....	55,000	.....	33,600	14,000	74,600	1,250	.352	.39	B.
The year..	3,350,000	.....	280,000	83,800	3,550,000	4,900	1.38	18.74	
1902-3.									
October.....	73,500	.....	8,400	7,000	74,900	1,220	.344	.40	B.
November.....	126,000	.....	.....	.....	126,000	2,120	.597	.67	B.
December.....	176,000	.....	.....	.....	176,000	2,870	.809	.93	B.
January.....	429,000	.....	.....	.....	429,000	6,980	1.97	2.27	B.
February.....	145,000	.....	.....	.....	145,000	2,620	.738	.77	A.
March.....	213,000	.....	.....	.....	213,000	3,460	.975	1.12	A.
April.....	382,000	.....	17,500	.....	400,000	6,720	1.89	2.11	A.
May.....	781,000	.....	61,300	7,300	835,000	13,600	3.83	4.42	B.
June.....	1,140,000	.....	58,400	14,600	1,180,000	19,800	5.58	6.23	B.
July.....	338,000	.....	55,500	21,900	372,000	6,050	1.70	1.96	A.
August.....	92,300	.....	55,500	21,900	126,000	2,050	.577	.67	A.
September.....	86,000	.....	35,000	14,600	106,000	1,780	.501	.56	A.
The year..	3,980,000	.....	292,000	87,300	4,180,000	5,780	1.63	22.11	
1903-4.									
October.....	226,000	.....	8,760	7,300	227,000	3,690	1.04	1.20	A.
November.....	233,000	.....	.....	.....	233,000	3,920	1.10	1.23	A.
December.....	309,000	.....	.....	.....	309,000	5,030	1.42	1.64	A.
January.....	195,000	.....	.....	.....	195,000	3,170	.893	1.03	A.
February.....	126,000	.....	.....	.....	126,000	2,190	.617	.67	A.
March.....	194,000	.....	.....	.....	194,000	3,150	.887	1.02	A.
April.....	976,000	.....	18,400	.....	994,000	16,700	4.70	5.24	B.
May.....	886,000	.....	64,300	7,650	944,000	15,400	4.34	5.00	B.
June.....	681,000	.....	61,200	15,300	727,000	12,200	3.44	3.84	B.
July.....	304,000	.....	58,100	23,000	339,000	5,510	1.55	1.79	B.
August.....	79,100	.....	58,100	23,000	114,000	1,860	.524	.60	B.
September.....	51,600	.....	36,800	15,300	73,100	1,230	.346	.39	B.
The year..	4,260,000	.....	306,000	91,600	4,480,000	6,160	1.74	23.65	
1904-5.									
October.....	63,700	.....	9,180	7,650	65,200	1,060	.299	.34	B.
November.....	124,000	.....	.....	.....	124,000	2,080	.586	.65	A.
December.....	171,000	.....	.....	.....	171,000	2,780	.783	.90	A.
January.....	113,000	.....	.....	.....	113,000	1,830	.515	.59	A.
February.....	95,900	.....	.....	.....	95,900	1,730	.487	.51	A.
March.....	463,000	.....	.....	.....	463,000	7,540	2.12	2.44	A.
April.....	283,000	.....	19,200	.....	302,000	5,080	1.43	1.60	A.
May.....	303,000	.....	67,200	8,000	362,000	5,890	1.66	1.91	A.
June.....	495,000	.....	64,000	16,000	543,000	9,130	2.57	2.87	A.
July.....	167,000	.....	60,800	24,000	203,000	3,300	.930	1.07	A.
August.....	56,700	.....	60,800	24,000	93,100	1,510	.425	.49	A.
September.....	53,800	.....	38,400	16,000	76,200	1,280	.361	.40	A.
The year..	2,390,000	.....	320,000	95,600	2,610,000	3,610	1.02	13.77	

Monthly discharge of Yakima River at Union Gap near Yakima—Continued.

Month.	Estimated run-off in acre-feet.					Estimated natural discharge in second-feet.		Run-off in inches.	Accuracy of observed discharge.
	Observed.	Stored.	Diver- sion for irri- gation	Seepage return.	Natural.	Mean.	Per square mile.		
1905-6.									
October.....	197,000	.....	9,600	8,000	199,000	3,240	0.911	1.05	A.
November.....	112,000	.....	.....	.....	112,000	1,880	.530	.59	A.
December.....	105,000	.....	.....	.....	105,000	1,700	.479	.55	A.
January.....	112,000	+6,600	.....	.....	119,000	1,940	.546	.63	A.
February.....	215,000	-2,080	.....	.....	213,000	3,840	1.08	1.12	A.
March.....	214,000	+1,080	.....	.....	215,000	3,500	.986	1.14	A.
April.....	589,000	+12,400	10,000	.....	611,000	10,300	2.90	3.24	A.
May.....	486,000	+4,280	70,200	8,350	552,000	8,980	2.53	2.92	A.
June.....	262,000	-3,070	66,800	16,700	309,000	5,190	1.46	1.63	A.
July.....	121,000	-12,300	63,500	25,000	147,000	2,390	.673	.78	C.
August.....	42,700	-8,220	63,500	25,000	73,000	1,190	.335	.39	C.
September.....	42,000	-2,490	40,100	16,700	62,900	1,060	.299	.33	C.
The year..	2,500,000	-3,800	324,000	99,800	2,720,000	3,750	1.06	14.37	
1906-7.									
October.....	136,000	+13,000	20,000	8,350	161,000	2,620	.738	.85	C.
November.....	738,000	+5,200	.....	.....	743,000	12,500	3.52	3.93	C.
December.....	241,000	-3,630	.....	.....	237,000	3,850	1.08	1.24	C.
January.....	149,000	-5,620	.....	.....	143,000	2,330	.656	.76	C.
February.....	374,000	+4,160	.....	.....	378,000	6,810	1.92	2.00	C.
March.....	310,000	-7,250	.....	.....	303,000	4,930	1.39	1.60	B.
April.....	502,000	+17,900	20,800	.....	541,000	9,090	2.56	2.86	B.
May.....	867,000	+16,500	73,000	8,700	948,000	15,400	4.34	5.00	C.
June.....	455,000	-396	69,600	17,400	507,000	8,520	2.40	2.68	B.
July.....	152,000	-2,970	66,100	26,100	189,000	3,070	.865	1.00	B.
August.....	57,200	-10,100	66,100	26,100	87,100	1,420	.400	.46	B.
September.....	66,000	-9,720	41,700	17,400	80,600	1,350	.380	.42	B.
The year..	4,050,000	+17,100	357,000	104,000	4,320,000	5,960	1.68	22.80	
1907-8.									
October.....	54,400	-11,400	10,400	8,700	44,700	^a 727	.205	.24	B.
November.....	69,600	+11,400	.....	.....	81,000	1,360	.383	.43	B.
December.....	133,000	+2,130	.....	.....	135,000	2,200	.620	.71	B.
January.....	105,000	-10,900	.....	.....	94,100	1,530	.431	.50	C.
February.....	77,100	-1,130	.....	.....	76,000	1,320	.372	.40	C.
March.....	342,000	+40,500	.....	.....	382,000	6,210	1.75	2.02	C.
April.....	422,000	+4,170	21,800	.....	448,000	7,530	2.12	2.36	C.
May.....	600,000	+8,690	76,400	9,100	676,000	11,000	3.10	3.57	A.
June.....	619,000	+542	72,800	18,200	674,000	11,300	3.18	3.55	A.
July.....	399,000	-4,080	69,300	27,300	437,000	7,110	2.00	2.31	A.
August.....	97,200	-21,200	69,300	27,300	118,000	1,920	.540	.62	B.
September.....	70,800	-23,000	43,700	18,200	73,300	1,230	.346	.39	B.
The year..	2,990,000	-4,280	364,000	109,000	3,240,000	4,460	1.26	17.10	
1908-9.									
October.....	68,900	+1,570	10,900	9,100	72,300	1,180	.332	.38	B.
November.....	125,000	+23,000	.....	.....	148,000	2,490	.701	.78	A.
December.....	99,000	+3,390	.....	.....	102,000	1,660	.468	.54	A.
January.....	124,000	-1,000	.....	.....	123,000	2,000	.563	.65	B.
February.....	103,000	-370	.....	.....	103,000	1,850	.521	.54	A.
March.....	135,000	+2,940	.....	.....	138,000	2,240	.631	.73	A.
April.....	257,000	+4,720	22,800	.....	285,000	4,790	1.35	1.51	B.
May.....	452,000	+7,580	79,800	9,500	530,000	8,620	2.43	2.80	A.
June.....	581,000	+4,260	76,000	19,000	642,000	10,800	3.04	3.39	A.
July.....	199,000	-6,440	72,200	28,500	236,000	3,840	1.08	1.24	A.
August.....	79,900	-33,100	72,200	28,500	90,500	1,470	.414	.48	A.
September.....	54,700	-11,500	45,600	19,000	69,800	1,170	.330	.37	A.
The year..	2,280,000	-4,950	380,000	114,000	2,540,000	3,510	.99	13.41	

^a The sum of the mean monthly discharges of the Tieton near Naches, Naches at Oak Flat, and Yakima at Cle Elum amounts to 723 second-feet for this month. On this basis the true natural flow at Union Gap must have been at least 800 second-feet. See Water-Supply Paper 369, footnote ^a, p. 49.

Monthly discharge of Yakima River at Union Gap near Yakima—Continued.

Month.	Estimated run-off in acre-feet.					Estimated natural discharge in second-feet.		Run-off in inches.	Accuracy of observed discharge.
	Observed.	Stored.	Diver- sion for irri- gation.	Seepage return.	Natural.	Mean.	Per square mile.		
1909-10.									
October	68,200	-1,580	11,400	9,500	68,500	1,110	.313	.36	A.
November	524,000	+65,600			590,000	9,920	2.79	3.11	B.
December	401,000	-36,300			365,000	5,940	1.67	1.92	A.
January	195,000	-5,680			189,000	3,070	.865	1.00	A.
February	163,000	-490			163,000	2,940	.828	.86	A.
March	861,000	+18,700			880,000	14,300	4.03	4.65	A.
April	750,000	+7,020	23,800		781,000	13,100	3.69	4.12	A.
May	750,000	-2,520	83,100	9,900	821,000	13,400	3.77	4.35	A.
June	344,000	-540	79,200	19,800	403,000	6,770	1.91	2.13	A.
July	127,000	-510	75,300	29,700	172,000	2,800	.789	.91	A.
August	68,900	-41,200	75,300	29,700	73,300	1,190	.335	.39	A.
September	50,000	-7,450	47,500	19,800	70,200	1,180	.332	.37	A.
The year	4,300,000	-4,950	396,000	118,000	4,580,000	6,320	1.78	24.17	
1910-11.									
October	166,000	+20,700	11,900	9,900	189,000	3,070	.865	1.00	A.
November	345,000	+21,200			366,000	6,150	1.73	1.93	A.
December	211,000	-27,100			184,000	2,990	.842	.97	A.
January	130,000	+14,000			144,000	2,340	.659	.76	A.
February	78,300	+839			79,100	1,420	.400	.42	A.
March	184,000	+11,200			195,000	3,170	.893	1.03	A.
April	309,000	+4,510	24,700		338,000	5,680	1.60	1.78	A.
May	436,000	+11,700	86,600	10,300	524,000	8,530	2.40	2.77	A.
June	462,000	+24,900	82,500	20,600	549,000	9,220	2.60	2.90	A.
July	152,000	-14,100	78,300	30,900	185,000	3,010	.848	.98	A.
August	81,800	-53,600	78,300	30,900	75,600	1,230	.346	.40	A.
September	97,600	-8,790	49,500	20,600	118,000	1,980	.558	.62	A.
The year	2,650,000	+5,460	412,000	123,000	2,950,000	4,070	1.15	15.56	
1911-12.									
October	70,700	-6,120	12,400	10,300	66,700	1,080	.304	.35	A.
November	215,000	+46,900			262,000	4,400	1.24	1.38	A.
December	172,000	-15,400			157,000	2,550	.718	.83	A.
January	194,000	+2,240			196,000	3,190	.899	1.04	C.
February	232,000	-11,800			220,000	3,820	1.08	1.16	A.
March	170,000	-11,000			159,000	2,590	.730	.84	A.
April	370,000	+893	25,900		397,000	6,670	1.88	2.10	A.
May	670,000	+52,700	90,700	10,800	803,000	13,100	3.69	4.25	A.
June	467,000	+14,400	86,400	21,600	546,000	9,180	2.59	2.89	A.
July	148,000	-6,900	82,100	32,400	191,000	3,110	.876	1.01	A.
August	98,400	-51,000	82,100	32,400	97,100	1,580	.445	.51	A.
September	102,000	-40,300	51,800	21,600	91,900	1,540	.434	.48	A.
The year	2,910,000	-25,400	431,000	129,000	3,190,000	4,390	1.24	16.84	
1912-13.									
October	73,200	-2,720	13,000	10,800	72,700	1,180	.332	.38	A.
November	136,000	+1,620			138,000	2,320	.654	.73	A.
December	116,000	-3,490			113,000	1,840	.518	.60	A.
January	158,000	-8,010			150,000	2,440	.687	.79	A.
February	200,000	-2,550			197,000	3,550	1.00	1.04	A.
March	213,000	-24,400			189,000	3,070	.865	1.00	A.
April	416,000	+36,400	26,900		479,000	8,050	2.27	2.53	A.
May	735,000	+35,900	94,100	11,200	854,000	13,900	3.91	4.51	A.
June	842,000	+49,500	89,600	22,400	959,000	16,100	4.54	5.06	A.
July	308,000	+8,060	85,100	33,600	368,000	5,980	1.68	1.94	A.
August	93,900	-33,500	85,100	33,600	112,000	1,820	.513	.59	B.
September	91,900	-27,600	53,800	22,400	95,700	1,610	.454	.51	A.
The year	3,380,000	+29,200	448,000	134,000	3,730,000	5,150	1.45	19.68	

Monthly discharge of Yakima River at Union Gap near Yakima—Continued.

Month.	Estimated run-off in acre-feet.					Estimated natural discharge in second-feet.		Run-off in inches.	Accuracy of observed discharge.
	Observed.	Stored.	Diver- sion for irri- gation.	Seepage return.	Natural.	Mean.	Per square mile.		
1913-14.									
October.....	156,000	-40,400	13,400	11,200	118,000	1,920	0.541	0.62	B
November.....	119,000	+22,700	.....	.....	142,000	2,390	.673	.75	B.
December.....	130,000	-28,000	.....	.....	102,000	1,660	.468	.54	A.
January.....	232,000	+12,700	.....	.....	245,000	3,980	1.12	1.29	B.
February.....	123,000	-2,650	.....	.....	120,000	2,160	.608	.63	A.
March.....	357,000	+28,300	.....	.....	385,000	6,260	1.76	2.03	A.
April.....	532,000	+36,800	27,800	.....	597,000	10,000	2.82	3.15	A.
May.....	609,000	+46,400	97,400	11,600	741,000	12,100	3.41	3.93	A.
June.....	342,000	+526	92,800	23,200	412,000	6,920	1.95	2.18	A.
July.....	148,000	-29,300	88,200	34,800	172,000	2,800	.789	.91	B.
August.....	99,600	-81,300	88,200	34,800	71,700	1,170	.330	.38	B.
September.....	88,700	-43,900	55,700	23,200	77,300	1,300	.366	.41	B.
The year..	2,940,000	-78,100	464,000	139,000	3,180,000	4,390	1.24	16.82	
1914-15.									
October.....	104,000	-5,760	13,900	11,600	101,000	1,640	.462	.53	B.
November.....	249,000	+27,100	.....	.....	276,000	4,640	1.31	1.46	A.
December.....	145,000	-21,600	.....	.....	123,000	2,000	.563	.65	B.
January.....	71,300	+771	.....	.....	72,100	1,170	.330	.38	B.
February.....	62,800	+5,170	.....	.....	68,000	1,220	.344	.36	B.
March.....	228,000	+11,100	.....	.....	239,000	3,890	1.10	1.27	B.
April.....	447,000	+39,000	26,400	.....	512,000	8,600	2.42	2.70	B.
May.....	189,000	+38,400	92,400	11,000	309,000	5,030	1.42	1.64	A.
June.....	109,000	-19,300	88,000	22,000	156,000	2,620	.738	.82	A.
July.....	99,000	-70,000	83,600	33,000	79,600	1,290	.363	.42	A.
August.....	51,700	-37,200	83,600	33,000	65,100	1,060	.299	.34	A.
September.....	23,000	-4,540	52,800	22,000	49,300	829	.234	.26	A.
The year..	1,780,000	-36,900	441,000	133,000	2,050,000	2,830	.797	10.83	
1915-16.									
October.....	49,200	+19,400	13,200	11,000	70,800	1,150	.324	.37	B.
November.....	121,000	+12,400	.....	.....	133,000	2,240	.631	.70	A.
December.....	120,000	+13,200	.....	.....	133,000	2,160	.608	.70	A.
January.....	95,900	-3,660	.....	.....	92,200	1,500	.423	.49	B.
February.....	174,000	+10,200	.....	.....	184,000	3,200	.901	.97	A.
March.....	608,000	+40,700	.....	.....	649,000	10,600	2.99	3.45	A.
April.....	714,000	+31,900	28,300	.....	774,000	13,000	3.66	4.08	B.
May.....	842,000	+49,800	99,100	11,800	979,000	15,900	4.48	5.16	A.
June.....	982,000	+87,500	94,400	23,600	1,140,000	19,200	5.41	6.04	A.
July.....	676,000	+441	89,700	35,400	731,000	11,900	3.35	3.86	A.
August.....	201,000	-30,000	89,700	35,400	225,000	3,660	1.03	1.19	A.
September.....	132,000	-66,400	56,600	23,600	98,600	1,660	.468	.52	A.
The year..	4,720,000	+165,000	471,000	141,000	5,210,000	7,180	1.97	27.53	
1916-17.									
October.....	86,100	-26,300	14,200	11,800	62,200	1,010	.285	.33	B.
November.....	86,900	+10	.....	.....	86,900	1,460	.411	.46	B.
December.....	89,800	-14,000	.....	.....	75,800	1,230	.346	.40	B.
January.....	83,600	+13,700	.....	.....	97,300	1,580	.445	.51	B.
February.....	98,300	+31,800	.....	.....	130,000	2,340	.659	.69	A.
March.....	84,800	+11,600	.....	.....	96,400	1,570	.442	.51	A.
April.....	194,000	+15,200	29,000	.....	238,000	4,000	1.13	1.26	B.
May.....	695,000	+71,100	102,000	12,100	856,000	13,900	3.92	4.52	A.
June.....	815,000	+30,200	96,800	24,200	918,000	15,400	4.34	4.84	A.
July.....	488,000	+2,560	92,000	36,300	546,000	8,880	2.50	2.88	A.
August.....	164,000	-92,600	92,000	36,300	127,000	2,070	.583	.67	A.
September.....	105,000	-61,700	58,100	24,200	77,200	1,300	.366	.41	A.
The year..	2,990,000	-18,400	484,000	145,000	3,310,000	4,570	1.27	17.48	

Monthly discharge of Yakima River at Union Gap near Yakima—Continued.

Month.	Estimated run-off in acre-feet,					Estimated natural discharge in second-feet.		Run-off in inches.	Accuracy of observed discharge.
	Observed.	Stored.	Diver-sion for irrigation.	Seepage return.	Natural.	Mean.	Per square mile.		
1917-18.									
October.....	70,700	-25,800	14,500	12,100	47,300	769	0.217	0.25	B.
November.....	86,300	-20,800			65,500	1,100	.310	.35	B.
December.....	726,000	+170,000			896,000	14,600	4.11	4.74	A.
January.....	812,000	-39,300			773,000	12,600	3.55	4.09	A.
February.....	217,000	+16,800			234,000	4,210	1.19	1.24	B.
March.....	186,000	+11,200			197,000	3,200	.901	1.04	B.
April.....	355,000	+55,600	29,500		440,000	7,390	2.08	2.32	B.
May.....	408,000	+36,200	103,000	12,300	535,000	8,700	2.45	2.82	A.
June.....	453,000	-1,930	98,400	24,600	525,000	8,820	2.48	2.77	A.
July.....	159,000	-52,800	93,500	36,900	163,000	2,650	.746	.86	A.
August.....	152,000	-119,000	93,500	36,900	89,600	1,460	.411	.47	A.
September.....	105,000	-88,000	59,000	24,600	51,400	864	.243	.27	A.
The year..	3,730,000	-57,200	491,000	147,000	4,020,000	5,550	1.56	21.22	
1918-19.									
October.....	91,600	+26,600	14,800	12,300	121,000	1,970	.555	.64	B.
November.....	128,000	+10,700			139,000	2,340	.659	.74	B.
December.....	266,000	+42,300			308,000	5,010	1.41	1.63	B.
January.....	316,000	+54,800			371,000	6,030	1.70	1.96	B.
February.....	176,000	-15,200			161,000	2,900	.817	.85	A.
March.....	194,000	-15,200			179,000	2,910	.817	.94	A.
April.....	443,000	+41,700	29,500		514,000	8,640	2.43	2.71	A.
May.....	526,000	+60,100	103,000	12,300	677,000	11,000	3.10	3.57	A.
June.....	380,000	+45,500	98,400	24,600	499,000	8,390	2.36	2.63	A.
July.....	200,000	-12,400	93,500	36,900	244,000	3,970	1.12	1.29	A.
August.....	162,000	-139,000	93,500	36,900	79,600	1,290	.363	.42	A.
September.....	107,000	-70,700	59,000	24,600	70,700	1,190	.335	.37	A.
The year..	2,990,000	+29,200	492,000	148,000	3,360,000	4,640	1.31	17.75	

NOTE.—Maximum discharge during period of record, about 63,900 second-feet, Nov. 15, 1906.

Discharge does not include 20 to 25 second-feet diverted by the Union Gap Irrigation Co., during irrigation seasons since 1906.

Discharge January and February, 1897, estimated; for May, 1908, to March, 1911, and October, 1914, to September, 1919, determined by adding discharge of Yakima River near Parker, Sunnyside, Old Reservation, and New Reservation canals.

Method of estimating natural discharge described in Water-Supply Paper 369, pp. 50-55.

Yearly discharge of Yakima River at Union Gap near Yakima.

Year ending September 30.	Discharge in second-feet.				Annual run-off.	
	Minimum, calendar month.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
	Mean.	Month.				
1897.....	879	Oct.....	5,580	1.57	21.32	4,040,000
1898.....	830	Oct.....	5,150	1.45	19.69	3,730,000
1899.....	1,320	Oct.....	5,190	1.46	19.82	3,760,000
1900.....	1,430	Aug. and Sept.	4,930	1.39	18.87	3,570,000
1901.....	1,520	Sept.....	5,420	1.53	20.73	3,930,000
1902.....	1,090	Oct.....	4,900	1.38	18.74	3,550,000
1903.....	1,220	Oct.....	5,780	1.63	22.11	4,180,000
1904.....	1,230	Sept.....	6,160	1.74	23.65	4,480,000
1905.....	1,060	Oct.....	3,610	1.02	13.77	2,610,000
1906.....	1,060	Sept.....	3,750	1.06	14.37	2,720,000
1907.....	1,350	Sept.....	5,960	1.68	22.80	4,320,000
1908.....	727	Oct.....	4,460	1.26	17.10	3,240,000
1909.....	1,170	Sept.....	3,510	.99	13.41	2,540,000
1910.....	1,110	Oct.....	6,320	1.78	24.17	4,580,000
1911.....	1,230	Aug.....	4,070	1.15	15.56	2,950,000
1912.....	1,080	Oct.....	4,390	1.24	16.84	3,190,000
1913.....	1,180	Oct.....	5,150	1.45	19.68	3,730,000
1914.....	1,170	Aug.....	4,390	1.24	16.82	3,180,000
1915.....	829	Sept.....	2,830	.797	10.83	2,050,000
1916.....	1,150	Oct.....	7,180	1.97	27.53	5,210,000
1917.....	1,010	Oct.....	4,570	1.27	17.48	3,310,000
1918.....	769	Oct.....	5,550	1.56	21.22	4,020,000
1919.....	1,190	Sept.....	4,640	1.31	17.75	3,360,000
The period.....	727	Oct., 1907..	4,930	1.39	18.88	3,580,000

YAKIMA RIVER NEAR PARKER¹¹ (114).

Water-stage recorder 600 feet below Sunnyside diversion dam, 2 miles below Union Gap, and 1½ miles east of Parker, in Yakima County. Hook, staff, and cantilever chain gages, read once or twice daily, in use prior to August 17, 1915.

Water diverted above gage for irrigation of about 250,000 acres. Flow partly controlled by regulation in Keechelus, Kachess, Cle Elum, and Bumping reservoirs.

Drainage area, 3,560 square miles (revised); measured on topographic maps and on Plate I, Water-Supply Paper 369.

Monthly discharge of Yakima River near Parker.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908.					
April 25-30.....	9,460	6,420	7,550	89,900	A.
May.....	10,800	6,420	8,620	530,000	A.
June.....	16,400	5,160	9,390	559,000	A.
July.....	9,310	1,390	5,470	336,000	A.
August.....	1,220	290	599	36,800	B.
September.....	550	146	316	18,800	B.
The period.....				1,570,000	
1908-9.					
October.....	896	138	459	28,200	B.
November.....	3,060	977	1,950	116,000	A.
December.....	1,970	1,110	1,560	95,900	A.
January.....	3,360	1,470	1,010	124,000	B.
February.....	3,670	1,390	1,860	103,000	A.
March.....	4,100	1,460	2,190	135,000	A.
April.....	5,140	2,560	3,600	214,000	A.
May.....	10,300	4,100	6,230	383,000	A.
June.....	15,800	3,540	8,690	517,000	A.
July.....	3,800	685	2,080	128,000	A.
August.....	700	156	324	19,900	A.
September.....	268	12	115	6,840	B.
The year.....	15,800	12	2,580	1,870,000	
1909-10.					
October.....	420	214	312	19,200	A.
November.....	33,400	240	8,800	524,000	B.
December.....	27,000	2,800	6,520	401,000	A.
January.....	6,140	1,930	3,170	195,000	A.
February.....	4,330	2,180	2,930	163,000	A.
March.....	28,300	4,350	13,900	855,000	A.
April.....	23,900	7,480	11,600	690,000	A.
May.....	19,500	7,720	11,000	676,000	A.
June.....	8,740	1,930	4,570	272,000	A.
July.....	1,690	152	916	56,300	A.
August.....	820	100	273	16,800	A.
September.....	166	10	401	2,390	B.
The year.....	33,400	10	5,350	3,870,000	
1910-11.					
October.....	3,140	26	1,820	112,000	A.
November.....	15,700	1,850	5,660	337,000	A.
December.....	5,620	2,380	3,400	209,000	A.
January.....	2,750	1,690	2,100	129,000	A.
February.....	1,690	1,050	1,300	72,200	A.
March.....	5,940	1,090	2,920	180,000	A.
April.....	6,480	2,310	4,050	241,000	A.
May.....	7,350	4,380	5,770	355,000	A.
June.....	12,500	2,920	6,890	410,000	A.
July.....	2,750	196	1,240	76,200	A.
August.....	383	10	146	8,980	A.
September.....	1,120	120	751	44,700	A.
The year.....	15,700	10	3,000	2,180,000	

¹¹ Called Yakima River near Wapato prior to 1917.

Monthly discharge of Yakima River near Parker—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911-12.					
October.....	477	0	210	12,900	A.
November.....	15,300	564	3,830	228,000	A.
December.....	4,770	2,050	2,980	183,000	A.
January.....	6,370	1,320	3,170	195,000	B.
February.....	5,630	2,990	3,940	227,000	A.
March.....	5,160	1,950	2,690	165,000	A.
April.....	7,800	4,000	5,370	320,000	A.
May.....	16,200	5,460	10,200	627,000	A.
June.....	9,620	2,730	6,440	383,000	A.
July.....	3,150	68	854	52,500	A.
August.....	568	132	300	18,400	A.
September.....	1,020	249	642	38,200	A.
The year.....	16,200	0	3,390	2,450,000	
1912-13.					
October.....	735	174	375	23,100	B.
November.....	3,720	913	2,400	143,000	A.
December.....	2,640	1,720	2,210	136,000	A.
January.....	3,660	1,800	2,620	161,000	A.
February.....	7,650	1,800	3,770	209,000	A.
March.....	4,860	2,800	3,690	227,000	A.
April.....	12,500	2,640	6,460	384,000	A.
May.....	20,400	4,240	10,900	670,000	A.
June.....	22,600	6,510	12,300	732,000	A.
July.....	6,510	1,080	3,530	217,000	A.
August.....	1,080	2	284	17,500	B.
September.....	1,560	20	385	22,900	B.
The year.....	22,600	2	4,070	2,940,000	
1913-14.					
October.....	2,800	401	2,020	124,000	A.
November.....	2,960	1,340	1,840	109,000	A.
December.....	3,130	1,230	2,060	127,000	A.
January.....	7,350	1,340	3,740	230,000	A.
February.....	3,300	1,680	2,220	123,000	A.
March.....	8,610	3,300	5,360	329,000	A.
April.....	10,400	4,040	6,960	414,000	A.
May.....	11,200	4,440	7,590	467,000	A.
June.....	8,610	1,560	3,910	233,000	A.
July.....	1,800	37	649	39,900	B.
August.....	417	23	111	6,820	B.
September.....	1,180	18	513	30,500	B.
The year.....	11,200	18	3,080	2,230,000	
1914-15.					
October.....	2,340	267	1,230	75,600	A.
November.....	5,760	2,060	4,170	248,000	A.
December.....	4,040	1,230	2,360	145,000	B.
January.....	1,680	786	1,160	71,600	B.
February.....	1,680	900	1,130	63,000	A.
March.....	7,960	1,800	3,520	216,000	A.
April.....	15,300	1,680	6,440	383,000	A.
May.....	2,200	823	1,400	86,300	A.
June.....	1,450	8	242	14,400	B.
July.....	401	7	90.2	5,550	B.
August.....	25	0	9.55	587	C.
September.....	28	2	12.6	750	C.
The year.....	15,300	0	1,810	1,310,000	
1915-16.					
October.....	1,180	15	189	11,600	B.
November.....	2,340	1,560	1,960	117,000	A.
December.....	3,660	1,340	1,950	120,000	A.
January.....	3,040	940	1,560	96,100	B.
February.....	5,030	1,080	3,020	174,000	A.
March.....	19,800	2,720	9,750	600,000	A.
April.....	14,800	6,380	11,000	651,000	A.
May.....	23,300	6,550	11,800	723,000	A.
June.....	24,100	8,580	14,600	868,000	A.
July.....	17,100	3,400	9,370	576,000	A.
August.....	3,400	323	1,470	90,300	A.
September.....	1,250	694	994	59,200	A.
The year.....	24,100	15	5,640	4,090,000	

Monthly discharge of Yakima River near Parker—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1916-17.					
October.....	1,330	380	803	49,400	A.
November.....	1,760	1,080	1,460	86,700	A.
December.....	1,700	986	1,460	89,600	A.
January.....	1,640	995	1,360	83,800	B.
February.....	2,130	924	1,770	98,300	B.
March.....	1,640	968	1,280	78,600	A.
April.....	4,560	942	2,420	144,000	A.
May.....	19,600	3,220	9,340	575,000	A.
June.....	17,100	7,950	11,600	690,000	A.
July.....	11,400	1,120	5,720	352,000	A.
August.....	924	374	623	38,300	A.
September.....	1,030	101	448	26,700	B.
The year.....	19,600	101	3,190	2,310,000	
1917-18.					
October.....	899	5	461	28,300	B.
November.....	2,060	857	1,440	85,700	A.
December.....	50,100	1,350	11,800	726,000	B.
January.....	35,600	4,650	13,200	812,000	B.
February.....	4,870	2,810	3,910	217,000	A.
March.....	4,870	2,330	2,930	180,000	A.
April.....	7,440	3,240	4,840	288,000	A.
May.....	8,360	1,650	4,410	271,000	A.
June.....	9,680	1,450	5,250	312,000	A.
July.....	1,120	65	404	24,800	B.
August.....	684	137	451	27,700	B.
September.....	495	7	177	10,500	B.
The year.....	50,100	5	4,120	2,980,000	
1918-19.					
October.....	2,970	319	840	51,400	A.
November.....	2,710	1,600	2,150	128,000	B.
December.....	10,000	1,860	4,330	266,000	B.
January.....	18,600	1,860	5,140	316,000	B.
February.....	4,330	2,260	3,160	176,000	A.
March.....	6,930	2,190	3,050	188,000	A.
April.....	9,350	3,930	6,110	363,000	A.
May.....	12,400	2,550	5,970	367,000	A.
June.....	6,650	2,190	3,940	235,000	A.
July.....	2,400	100	878	54,000	A.
August.....	521	63	243	15,000	B.
September.....	535	79	249	14,800	B.
The year.....	18,600	63	3,000	2,170,000	

NOTE.—Maximum discharge during period of record, 52,900 second-feet at 1 p. m. Dec. 30, 1917.

Yearly discharge of Yakima River near Parker.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1909.....	15,800	12	115	Sept.....	2,580	1,870,000
1910.....	33,400	10	273	Aug.....	5,350	3,870,000
1911.....	15,700	10	146	Aug.....	3,000	2,180,000
1912.....	16,200	0	210	Oct.....	3,390	2,450,000
1913.....	22,600	2	284	Aug.....	4,070	2,940,000
1914.....	11,200	18	111	Aug.....	3,080	2,230,000
1915.....	15,300	0	9.55	Aug.....	1,810	1,310,000
1916.....	24,100	15	189	Oct.....	5,640	4,090,000
1917.....	19,600	101	448	Sept.....	3,190	2,310,000
1918.....	50,100	5	177	Sept.....	4,120	2,980,000
1919.....	18,600	63	243	Aug.....	3,000	2,170,000
The period.....	50,100	0	9.55	Aug., 1915	3,570	2,580,000

YAKIMA RIVER NEAR MABTON (115).

Staff gage 4 miles below Mabton and 8½ miles above Prosser, in Yakima County. Many irrigation diversions above gaging station. Flow partly controlled by regulation in Keechelus, Kachess, Cle Elum, and Bumping reservoirs.

Monthly discharge of Yakima River near Mabton.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
July.....	3,190	491	1,460	89,800	A.
August.....	452	258	321	19,700	A.
September.....	1,470	276	1,020	60,700	A.
October 1-15.....	972	814	894	26,600	A.
The period.....				197,000	
1912.					
July 11-31.....	1,560	524	851	35,400	A.
August.....	845	479	581	35,700	A.
September.....	1,380	681	1,040	61,900	A.
The period.....				133,000	

YAKIMA RIVER NEAR PROSSER (116).

Water-stage recorder 1¼ miles northeast of Prosser, in Benton County. Chain and staff gages, read once or twice daily, prior to August 4, 1913.

Water diverted above gage for irrigation of about 250,000 acres. Flow partly controlled by regulation in Keechelus, Kachess, Cle Elum, and Bumping reservoirs.

Drainage area, 5,340 square miles; authority, United States Reclamation Service.

Monthly discharge of Yakima River near Prosser.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
April.....			16,700	957,000	C.
May.....			13,800	349,000	C.
June.....	15,100	7,780	11,500	695,000	B.
July.....	10,700	1,610	5,510	339,000	A.
August.....	1,480	280	658	40,500	A.
September.....	375	250	282	16,800	A.
October 1-10.....			457	9,240	A.
The period.....				2,910,000	
1906.					
February.....	5,940	2,720	4,150	230,000	A.
March.....	5,940	3,160	3,860	237,000	A.
April.....	11,700	7,740	9,130	543,000	A.
May.....	10,400	3,010	6,580	405,000	A.
June.....	5,940	1,820	3,600	214,000	A.
July.....	1,820	230	1,080	66,400	B.
August.....	200	40	106	6,520	C.
September.....	145	40	98	5,830	C.
October 1-12.....	345	80	210	5,000	C.
The period.....				1,710,000	
1913.					
August 4-31.....	1,310	431	628	34,900	A.
September.....	1,220	413	751	44,700	A.
The period.....				79,600	

Monthly discharge of Yakima River near Prosser—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1913-14.					
October.....	3,170	596	2,260	139,000	A.
November.....	3,040	1,940	2,450	146,000	A.
December.....	3,170	1,990	2,620	161,000	A.
January.....	7,680	1,940	4,380	269,000	A.
February.....	3,970	2,340	2,880	160,000	A.
March.....	9,180	4,290	6,340	390,000	A.
April.....	11,300	4,990	7,880	469,000	A.
May.....	11,000	5,170	8,060	496,000	A.
June.....	9,180	2,100	4,490	267,000	A.
July.....	2,160	454	1,220	75,000	A.
August.....	550	332	399	24,500	C.
September.....	1,360	454	858	51,100	A.
The year.....	11,300	332	3,660	2,650,000	
1914-15.					
October.....	2,790	841	1,680	103,000	A.
November.....	5,950	2,440	4,320	257,000	A.
December.....	4,140	1,840	2,710	167,000	B.
January.....	2,170	1,140	1,600	98,100	B.
February.....	2,390	1,420	1,630	90,800	A.
March.....	8,380	2,330	4,160	256,000	A.
April.....	13,800	2,330	7,140	425,000	A.
May.....	2,500	1,230	1,950	120,000	A.
June.....	1,890	389	689	41,000	B.
July.....	510	356	404	24,800	B.
August.....	389	307	354	21,800	B.
September.....	351	301	333	19,800	B.
The year.....	13,800	301	2,240	1,620,000	
1915-16.					
October.....	1,110	317	438	26,900	B.
April.....	15,900	7,970	12,400	737,000	A.
May.....	23,800	8,200	13,100	806,000	A.
June.....	23,000	10,200	14,800	878,000	A.
July.....	18,000	4,120	10,500	646,000	A.
August.....	4,030	1,080	2,160	133,000	A.
September.....	1,770	1,340	1,540	91,800	A.
1916-17.					
October.....	1,670	969	1,350	83,000	A.
April.....	5,320	1,620	3,030	180,000	A.
May.....	17,800	3,980	9,370	576,000	A.
June.....	18,200	9,510	12,500	744,000	A.
July.....	11,400	1,950	6,580	405,000	A.
August.....	1,720	836	1,150	70,700	A.
September.....	1,560	660	995	59,200	A.
1917-18.					
October.....	1,360	563	934	57,400	A.
April.....	7,590	3,820	5,460	325,000	A.
May.....	8,510	2,250	4,990	307,000	A.
June.....	10,000	2,430	5,740	342,000	A.
July.....	2,130	753	1,050	64,600	A.
August.....	1,130	765	927	57,000	A.
September.....	1,010	699	835	49,700	A.
1918-19.					
October.....	2,950	1,010	1,330	81,800	A.
April.....	10,000	4,950	6,990	416,000	A.
May.....	12,800	3,520	6,830	420,000	A.
June.....	9,250	3,300	4,900	292,000	A.
July.....	3,090	946	1,730	106,000	A.
August.....	1,120	795	919	56,500	A.
September.....	1,460	914	1,150	68,300	A.

NOTE.—Maximum discharge, during period of record, 62,800 second-feet, measured by floats at 3 p. m. Nov. 17, 1906; minimum discharge, about 40 second-feet for five days in August and September, 1906. Discharge for April and May, 1904, estimated by comparison with discharge of Yakima River at Union Gap.

YAKIMA RIVER AT KIONA (117).

Chain gage on highway bridge at Kiona, in Benton County.

Water diverted above gage for irrigation of about 260,000 acres. Flow partly controlled by regulation in Keechelus, Kachess, Cle Elum, and Bumping reservoirs.

Drainage area, 5,520 square miles (revised); measured on topographic maps and Plate I, Water-Supply Paper 369.

Monthly discharge of Yakima River at Kiona.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1896.					
August.....	2,780	990	1,510	92,900	A.
September.....	1,010	830	917	54,600	A.
1896-97.					
October.....	820	780	799	49,100	A.
November.....	30,000	850	6,560	390,000	B.
December.....	16,700	2,880	9,100	560,000	A.
January.....	8,800	2,960	4,620	284,000	B.
February.....	4,990	2,960	3,990	222,000	B.
March.....	6,290	2,330	3,300	203,000	A.
April.....	25,300	4,100	13,000	773,000	B.
May.....	21,900	11,300	15,700	965,000	B.
June.....	14,000	4,890	7,420	441,000	A.
July.....	6,360	1,440	3,380	208,000	A.
August.....	1,440	780	1,030	63,500	A.
September.....	902	680	771	45,900	A.
The year.....	30,000	680	5,810	4,200,000	
1897-98.					
October.....	902	643	740	45,500	A.
November.....	19,500	833	5,240	312,000	A.
December.....	13,700	2,810	5,170	318,000	A.
January.....	12,500	1,760	4,320	266,000	B.
February.....	21,800	2,000	8,100	450,000	B.
March.....	7,280	3,120	5,200	320,000	A.
April.....	12,900	3,120	7,460	444,000	A.
May.....	18,300	9,400	12,900	793,000	B.
June.....	14,700	5,500	9,970	593,000	B.
July.....	5,190	1,940	3,240	199,000	A.
August.....	1,880	780	1,240	76,400	A.
September.....	846	612	695	41,400	A.
The year.....	21,800	612	5,330	3,860,000	
1898-99.					
October.....	1,650	916	1,190	73,200	A.
November.....	2,380	1,160	1,840	110,000	A.
December.....	8,000	813	1,790	110,000	A.
January.....	10,800	2,030	5,310	327,000	B.
February.....	9,900	3,310	5,400	300,000	B.
March.....	4,610	2,530	3,180	196,000	A.
April.....	7,100	2,720	4,980	296,000	A.
May.....	13,700	4,940	9,430	580,000	B.
June.....	16,400	10,600	13,500	805,000	B.
July.....	12,000	5,330	9,040	556,000	B.
August.....	5,230	2,130	3,240	199,000	A.
September.....	2,100	1,220	1,670	99,400	A.
The year.....	16,400	813	5,040	3,650,000	
1899-1900.					
October.....	2,560	1,090	1,650	102,000	A.
November.....	9,440	1,830	4,460	265,000	A.
December.....	14,700	2,890	7,770	478,000	A.
January.....	18,800	4,370	7,910	487,000	B.
February.....	4,840	2,100	3,960	220,000	B.
March.....	11,500	3,660	7,560	465,000	B.
April.....	11,200	4,560	7,500	447,000	B.
May.....	9,070	3,580	6,400	393,000	A.
June.....	4,100	2,460	3,360	200,000	A.
July.....	2,460	663	1,220	75,300	A.
August.....	637	450	515	31,700	A.
September.....	881	525	626	37,200	A.
The year.....	18,800	450	4,410	3,200,000	

Monthly discharge of Yakima River at Kiona—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1900-1901.					
October.....	2,240	749	1,190	73,000	A.
November.....	5,130	2,380	4,210	251,000	A.
December.....	14,900	5,430	9,390	578,000	B.
January.....	13,500	4,940	6,890	423,000	B.
February.....	14,700	3,590	6,300	350,000	B.
March.....	24,000	7,000	11,800	724,000	B.
April.....	8,780	5,830	7,420	442,000	B.
May.....	20,700	8,470	14,000	363,000	B.
June.....	15,300	5,230	8,770	522,000	B.
July.....	5,150	1,830	3,480	214,000	B.
August.....	1,770	525	1,050	64,700	A.
September.....	519	465	481	28,600	B.
The year.....	24,000	465	6,260	4,530,000	
1901-2.					
October.....	917	525	643	39,500	A.
November.....	6,250	940	3,200	191,000	A.
December.....	9,570	1,770	4,320	265,000	A.
January.....	10,100	560	6,410	394,000	B.
February.....	5,850	1,990	3,660	203,000	B.
March.....	4,870	3,630	4,280	263,000	A.
April.....	11,700	4,100	6,870	409,000	B.
May.....	16,900	10,100	13,400	823,000	B.
June.....	12,100	6,060	7,420	441,000	B.
July.....	6,120	2,290	4,240	261,000	C.
August.....	2,060	262	1,010	62,000	A.
September.....	655	224	303	18,000	A.
The year.....	16,900	224	4,650	3,370,000	
1902-3.					
October.....	1,130	641	808	49,700	A.
November.....	3,230	1,170	2,130	127,000	A.
December.....	4,870	1,760	2,920	179,000	A.
January.....	17,200	3,000	6,940	427,000	B.
February.....	4,350	2,420	2,980	166,000	B.
March.....	10,800	2,700	4,020	247,000	A.
April.....	11,400	4,740	7,430	442,000	B.
May.....	16,900	9,320	12,800	788,000	B.
June.....	23,500	11,100	18,200	1,080,000	B.
July.....	9,820	2,150	5,190	319,000	A.
August.....	2,150	555	1,120	68,800	A.
September.....	1,450	320	924	55,000	A.
The year.....	23,500	320	5,450	3,950,000	
1903-4.					
October.....	5,600	1,070	3,010	185,000	A.
November.....	5,160	2,280	2,980	177,000	A.
December.....	11,400	2,700	5,000	308,000	B.
January.....	5,270	2,150	3,140	193,000	B.
February.....	2,630	1,900	2,230	128,000	B.
March.....	6,370	1,900	3,800	234,000	A.
April.....	27,100	3,400	15,800	940,000	B.
May.....	21,200	10,100	13,900	852,000	B.
June.....	14,800	6,710	10,700	636,000	B.
July.....	9,570	1,350	4,650	286,000	A.
August.....	1,250	205	551	33,900	A.
September.....	355	205	232	13,800	B.
The year.....	27,100	205	5,490	3,990,000	
1904-5.					
October.....	872	355	620	38,100	B.
November.....	4,740	620	1,890	113,000	A.
December.....	5,160	2,080	3,170	195,000	A.
January.....	3,020	1,250	2,130	131,000	B.
February.....	4,170	1,120	1,970	110,000	B.
March.....	11,000	4,440	8,480	521,000	B.
April.....	10,300	3,320	5,000	297,000	A.
May.....	6,940	3,650	4,720	290,000	A.
June.....	13,400	3,990	7,140	425,000	B.
July.....	4,740	440	1,760	108,000	A.
August.....	465	142	240	14,800	A.
September.....	620	142	304	18,100	A.
The year.....	13,400	142	3,120	2,260,000	

Monthly discharge of Yakima River at Kiona—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1905-6.					
October.....	4,740	690	2,470	152,000	B.
November.....	2,560	1,560	1,860	111,000	B.
December.....	1,900	1,450	1,710	105,000	B.
January.....	3,900	1,250	1,850	114,000	B.
February.....	5,860	2,490	3,840	213,000	B.
March.....	5,760	3,080	3,710	228,000	A.
April.....	11,800	7,490	9,400	559,000	B.
May.....	10,700	3,000	6,620	407,000	A.
June.....	5,550	1,670	3,440	205,000	A.
July.....	1,670	228	923	56,800	A.
August.....	245	120	172	10,600	A.
September.....	210	105	162	9,640	A.
The year.....	11,800	105	3,000	2,170,000	
1906-7.					
October.....	5,550	228	1,120	68,900	A.
November.....	63,500	2,150	12,400	738,000	B.
December.....	7,940	3,560	5,010	308,000	B.
January.....			3,080	189,000	C.
February.....			7,770	432,000	C.
March.....	10,100	4,540	6,220	382,000	A.
April.....	13,000	4,540	9,000	536,000	A.
May.....	18,200	9,590	13,700	842,000	A.
June.....	15,000	5,550	7,970	474,000	A.
July.....	5,140	620	2,190	135,000	A.
August.....	555	245	350	21,500	B.
September.....	872	280	593	35,300	B.
The year.....	63,500	228	5,750	4,160,000	
1907-8.					
October.....	588	245	437	26,900	B.
November.....	2,150	355	1,100	65,500	A.
December.....	3,990	1,670	2,590	159,000	B.
January.....	3,000	1,560	2,180	134,000	B.
February.....	2,150	1,070	1,690	97,200	B.
March.....	14,700	1,780	6,010	370,000	B.
April.....	15,600	3,990	7,950	473,000	B.
May.....	11,200	7,270	9,420	579,000	A.
June.....	16,600	5,760	9,920	590,000	A.
July.....	10,200	1,840	6,070	373,000	A.
August.....	1,670	315	665	40,900	A.
September.....	655	391	530	31,500	A.
The year.....	16,600	245	4,050	2,940,000	
1908-9.					
October.....	872	298	613	37,700	A.
November.....	3,000	805	1,740	104,000	A.
December.....	2,020	1,370	1,680	103,000	A.
January.....	5,800	1,420	3,160	194,000	B.
February.....	4,600	1,730	2,580	143,000	A.
March.....	5,380	2,050	3,030	186,000	A.
April.....	6,050	3,430	4,600	274,000	A.
May.....	10,900	4,080	7,050	433,000	A.
June.....	17,200	5,020	9,900	589,000	A.
July.....	4,220	584	2,430	149,000	A.
August.....	1,030	252	545	33,500	A.
September.....	445	123	285	17,000	A.
The year.....	17,200	123	3,130	2,260,000	
1909-10.					
October.....	785	210	640	39,400	A.
November.....	9,000	714	8,570	510,000	A.
December.....	26,800	3,850	8,810	542,000	A.
January.....	8,540	2,500	3,950	243,000	B.
February.....	6,120	2,930	3,780	210,000	B.
March.....	29,200	4,900	15,200	935,000	A.
April.....	22,300	8,980	12,200	726,000	A.
May.....	18,100	8,150	11,500	707,000	A.
June.....	8,780	2,000	4,950	295,000	A.
July.....	1,920	410	1,060	65,200	A.
August.....	840	110	406	25,000	B.
September.....	480	251	399	23,700	B.
The year.....	29,200	110	5,970	4,320,000	

Monthly discharge of Yakima River near Kiona—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1910-11.					
October.....	3,100	363	1,970	121,000	A.
November.....	12,500	2,140	5,370	320,000	A.
December.....	5,600	2,680	3,750	231,000	A.
January.....	2,960	1,900	2,380	146,000	B.
February.....	2,020	1,380	1,740	96,600	A.
March.....	6,800	1,380	3,300	203,000	A.
April.....	7,460	2,960	4,690	279,000	A.
May.....	7,690	5,000	6,530	402,000	A.
June.....	13,000	3,920	7,790	464,000	A.
July.....	3,410	189	1,560	95,900	A.
August.....	635	250	380	23,400	A.
September.....	1,580	306	1,110	66,000	A.
The year.....	13,000	189	3,380	2,450,000	
1911-12.					
October.....	1,200	712	912	56,100	A.
November.....	12,700	1,040	3,820	227,000	A.
December.....	5,200	2,270	3,220	198,000	A.
January.....	7,230	1,290	3,390	208,000	A.
February.....	6,400	3,920	4,760	274,000	A.
March.....	5,600	2,400	3,050	188,000	A.
April.....	9,350	4,230	6,080	362,000	A.
May.....	15,600	6,000	10,600	652,000	A.
June.....	10,100	4,230	7,350	437,000	A.
July.....	3,610	684	1,550	95,300	A.
August.....	873	510	623	38,300	A.
September.....	1,430	522	1,040	61,900	A.
The year.....	15,600	510	3,850	2,800,000	
1912-13.					
October.....	1,330	605	898	55,200	A.
November.....	3,950	1,250	2,540	151,000	A.
December.....	3,430	1,710	2,240	138,000	A.
January.....	3,650	2,050	2,810	173,000	B.
February.....	8,280	2,050	4,270	237,000	B.
March.....	5,040	3,170	4,000	246,000	A.
April.....	11,800	3,330	6,830	407,000	A.
May.....	18,300	4,860	10,300	636,000	A.
June.....	20,900	7,000	12,300	732,000	A.
July.....	7,000	1,930	3,730	229,000	A.
August.....	1,710	305	649	39,900	A.
September.....	1,120	285	726	43,300	A.
The year.....	20,900	285	4,260	3,090,000	
1913-14.					
October.....	3,250	670	2,230	137,000	B.
November.....	2,710	1,710	2,210	131,000	B.
December.....	3,010	1,710	2,370	146,000	A.
January.....	7,840	1,600	4,210	259,000	A.
February.....	3,650	2,050	2,610	145,000	A.
March.....	9,220	4,330	6,300	387,000	A.
April.....	11,300	4,860	7,960	474,000	A.
May.....	11,000	5,040	7,990	491,000	A.
June.....	9,710	1,930	4,290	255,000	A.
July.....	1,930	475	1,160	71,200	B.
August.....	475	325	405	24,900	B.
September.....	1,390	448	862	51,300	A.
The year.....	11,300	325	3,560	2,570,000	
1914-15.					
October.....	2,710	725	1,550	95,200	C.
November.....	5,800	2,300	4,260	253,000	B.
December.....	4,160	1,410	2,520	155,000	B.
January.....	1,930	1,000	1,520	93,700	B.
February.....	2,140	1,390	1,590	88,100	B.
March.....	8,980	2,270	4,150	255,000	B.
The period.....				940,000	

NOTE.—Maximum discharge, during period of record, 63,500 second-feet, Nov. 17, 1906; minimum discharge, 105 second-feet, Sept. 11, 1906.

Yearly discharge of Yakima River at Kiona.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1897.....	30,000	680	771	Sept.....	5,810	4,200,000
1898.....	21,800	612	695	Sept.....	5,330	3,860,000
1899.....	16,400	813	1,190	Oct.....	5,040	3,650,000
1900.....	18,800	450	515	Aug.....	4,410	3,200,000
1901.....	24,000	465	481	Sept.....	6,260	4,530,000
1902.....	16,900	224	303	Sept.....	4,650	3,370,000
1903.....	23,500	320	808	Oct.....	5,450	3,950,000
1904.....	27,100	205	232	Sept.....	5,490	3,990,000
1905.....	13,400	142	240	Aug.....	3,120	2,260,000
1906.....	11,800	105	162	Sept.....	3,000	2,170,000
1907.....	63,500	228	350	Aug.....	5,750	4,160,000
1908.....	16,600	245	437	Oct.....	4,050	2,940,000
1909.....	17,200	123	285	Sept.....	3,130	2,260,000
1910.....	29,200	110	399	Sept.....	5,970	4,320,000
1911.....	13,000	189	380	Aug.....	3,380	2,450,000
1912.....	15,600	510	623	Aug.....	3,850	2,800,000
1913.....	20,900	285	649	Aug.....	4,260	3,090,000
1914.....	11,300	325	405	Aug.....	3,560	2,570,000
The period.....	63,500	105	162	Sept., 1906.	4,580	3,320,000

YAKIMA RIVER NEAR RICHLAND (118).

Staff gage at highway bridge 1 mile above mouth of river and 2 miles south of Richland, in Benton County. Gage used in 1906 at Richland Ferry, 2½ miles above mouth. Water diverted above the gaging station to serve entire irrigated area in Yakima Valley.

Drainage area, 5,970 square miles (revised); measured on Plate I, Water-Supply Paper 369.

Monthly discharge of Yakima River near Richland.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1906.					
July 28-31.....	185	100	140	1,110	B.
August.....	185	8	24.6	1,510	C.
September.....	29	8	10.7	637	C.
October 1-19.....	400	21	178	6,710	B.
The period.....				9,970	
1909.					
August.....	725	64	268	15,400	B.
September.....	400	38	140	8,330	B.
October.....	660	375	530	32,600	B.
The period.....				56,300	
1910.					
August.....	460	33	124	7,620	B.
September.....	460	33	176	10,500	B.
October.....	2,900	240	1,790	110,000	C.
The period.....				128,000	
1911.					
August.....	390	40	111	6,820	A.
September.....	1,520	103	921	54,800	B.
October 1-14.....	1,310	628	901	25,000	A.
The period.....				86,600	

CABIN CREEK NEAR EASTON (119).

Staff gage at Northern Pacific Railway bridge half a mile above the mouth of creek and 2 $\frac{3}{4}$ miles west of Easton, in Kittitas County; below a small diversion used by Northern Pacific Railway.

Drainage area, 32 square miles; measured on topographic maps.

Monthly discharge of Cabin Creek near Easton.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1909.							
May 12-31.....	715	197	322	10.1	7.51	12,800	B.
June.....	985	84	272	8.50	9.48	16,200	B.
July.....	84	25	47.1	1.47	1.70	2,900	A.
August.....	22	7.8	12.6	.394	.45	775	B.
September.....	18	3.0	8.77	.274	.31	522	C.
The period.....						33,200	
1909-10.							
October.....	34	15	20.1	.628	.72	1,240	B.
November.....	985	46	190	5.94	6.63	11,300	B.
December.....	335	60	132	4.12	4.75	8,120	B.
January.....	93	8	39.5	1.23	1.42	2,430	C.
February.....	78	2	21.3	.666	.69	1,180	C.
March.....	1,380	54	622	19.4	22.37	38,200	C.
April.....	1,120	133	414	12.9	14.39	24,600	C.
May.....	1,180	78	343	10.7	12.34	21,100	C.
June.....	110	28	64.8	2.02	2.25	3,860	C.
July.....	22	10	15.3	.478	.55	941	C.
August.....	10	8	8.6	.269	.31	529	C.
September.....	28	5	5.7	.178	.20	339	C.
The year.....	1,380	2	157	4.91	66.62	114,000	
1910.							
October.....	102	28	41.9	1.31	1.51	2,580	C.
November.....	770	36	261	8.16	9.10	15,500	C.
December.....	193	28	66.4	2.08	2.40	4,080	C.
The period.....						22,200	

KACHESS RIVER NEAR EASTON (120).

Water-stage recorder at highway bridge a quarter of a mile above mouth of river and 2 miles northwest of Easton, in Kittitas County; prior to August 15, 1916, half a mile upstream. Staff gages, read once or twice daily, in use prior to July 22, 1913.

Flow controlled by regulation in Kachess reservoir; monthly discharge without storage, since October, 1905, determined from records of stage at reservoir.

Drainage area, 63 square miles prior to August 15, 1916, 64 square miles after that date; measured on topographic maps.

Monthly discharge of Kachess River near Easton.

Month.	Discharge in second-feet.				Run-off.		Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1903-4.							
October.....			145	2.30	2.65	8,920	D.
November.....	530		364	5.78	6.45	21,700	A.
December.....	745	245	426	6.76	7.79	26,200	A.
January.....	390	195	286	4.54	5.23	17,600	A.
February.....	245	0	153	2.43	2.62	8,800	A.
March.....	420	0	227	3.60	4.15	14,000	A.
April.....	980	0	473	7.51	8.38	28,100	A.
May.....	900	0	578	9.17	10.57	35,500	B.
June.....	1,020	220	745	11.8	13.17	44,300	B.
July.....	745	145	305	4.84	5.58	18,800	A.
August.....	145	65	113	1.79	2.06	6,950	A.
September.....	220	33	147	2.33	2.60	8,750	A.
The year.....	1,020	0	330	5.24	71.25	240,000	
1904-5.							
October.....	315	73	138	2.19	2.52	8,480	A.
November.....	345	57	141	2.24	2.50	8,390	A.
December.....			376	5.97	6.88	23,100	A.
January.....	310	44	179	2.84	3.27	11,000	A.
February.....	142	26	98.9	1.57	1.64	5,490	B.
March.....	516	167	427	6.78	7.82	26,300	A.
April.....	586	17	320	5.08	5.67	19,000	A.
May.....	766	37	324	5.14	5.93	19,900	A.
June.....	932	193	451	7.16	7.99	26,800	A.
July.....	297	68	147	2.33	2.69	9,040	B.
August.....	232	87	146	2.32	2.68	8,980	B.
September.....	284	130	203	3.22	3.59	12,100	A.
The year.....	932	17	247	3.92	53.18	179,000	

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored. ^a	Without storage.	Mean.	Per square mile.		
1905-6.										
October.....	310	130	257	15,800	+3,510	19,300	314	4.98	5.74	B.
November.....	258	154	192	11,400	-2,460	8,960	151	2.40	2.68	B.
December.....	193	130	161	9,900	+2,820	12,700	207	3.29	3.79	B.
January.....	280	140	173	10,600	+3,190	13,800	224	3.56	4.10	B.
February.....	294	214	263	14,600	-714	13,900	250	3.97	4.13	B.
March.....	266	176	206	12,700	-1,590	11,100	181	2.87	3.31	B.
April.....	695	227	434	25,800	+7,340	33,100	556	8.83	9.85	A.
May.....	735	140	401	24,700	+7,110	31,800	517	8.21	9.46	A.
June.....	410	214	325	19,300	-184	19,100	321	5.10	5.69	A.
July.....	322	71	211	13,000	-7,830	5,170	84.1	1.33	1.53	B.
August.....	176	62	131	8,060	-6,610	1,450	23.6	.375	.43	B.
September.....	140	62	92.8	5,520	-3,350	2,170	36.5	.579	.65	B.
The year.....	735	62	237	171,000	+1,230	173,000	238	3.78	51.36	
1906-7.										
October.....	475	62	168	10,300	+6,900	17,200	280	4.44	5.12	B.
November.....	1,760	62	695	41,400	+5,580	47,000	790	12.5	13.95	A.
December.....	580	240	337	20,700	-7,540	13,200	215	3.41	3.93	A.
January.....	253	176	202	12,400	-1,240	11,200	182	2.89	3.33	B.
February.....	410	201	303	16,800	+2,130	18,900	340	5.40	5.62	B.
March.....	308	164	229	14,100	-3,020	11,100	181	2.87	3.31	A.
April.....	458	164	301	17,900	+4,980	22,900	385	6.11	6.82	A.
May.....	980	442	780	48,000	+6,510	54,500	886	14.1	16.26	A.
June.....	940	42	368	21,900	+5,140	27,000	454	7.21	8.04	A.
July.....	294	29	143	8,790	-1,470	7,320	119	1.89	2.18	A.
August.....	272	29	123	7,560	-5,530	2,030	33.0	.524	.60	A.
September.....	183	159	170	10,100	-7,440	2,660	44.7	.710	.79	A.
The year.....	1,760	29	318	230,000	+5,000	235,000	325	5.16	69.95	

^a Range of stage in Kachess Lake not observed prior to Sept. 20, 1905.

Monthly discharge of Kachess River near Easton—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1907-8.										
October.....	230	42	111	6,820	+5,640	1,180	19.2	0.305	0.35	A.
November.....	266	54	113	6,720	-3,450	10,200	171	2.71	3.02	A.
December.....	322	176	226	13,900	+1,770	15,700	255	4.05	4.67	A.
January.....	308	96	185	11,400	-3,890	7,510	122	1.94	2.24	B.
February.....	118	76	92.5	5,320	-351	4,970	86.4	1.37	1.48	A.
March.....	752	67	365	22,400	+6,380	28,800	468	7.43	8.57	A.
April.....	715	240	432	25,700	+2,150	27,800	467	7.41	8.27	A.
May.....	615	253	486	29,900	+8,000	37,900	616	9.78	11.28	A.
June.....	1,230	350	713	42,400	+368	42,800	719	11.4	12.72	A.
July.....	734	201	393	24,200	-478	23,700	385	6.11	7.04	A.
August.....	227	76	193	11,900	-7,920	3,980	64.7	1.03	1.19	A.
September.....	380	12	167	9,940	-7,860	2,080	35.0	.556	.62	B.
The year.....	1,230	12	290	211,000	-4,020	207,000	285	4.52	61.45	
1908-9.										
October.....	118	39	69.5	4,270	-632	3,640	59.2	.94	1.08	B.
November.....	253	45	119	7,080	+2,360	9,440	159	2.52	2.81	B.
December.....	176	122	140	8,610	-956	7,650	124	1.97	2.27	A.
January.....	146	111	134	8,240	-630	7,610	124	1.97	2.27	B.
February.....	136	92	116	6,440	-70	6,370	115	1.83	1.91	B.
March.....	175	106	121	7,440	+1,220	8,660	141	2.24	2.58	B.
April.....	366	175	232	13,800	+3,320	17,100	287	4.56	5.09	A.
May.....	744	366	526	32,300	+4,480	36,800	599	9.51	10.96	A.
June.....	1,020	64	612	36,400	+7,040	43,400	730	11.6	12.94	A.
July.....	412	69	192	11,800	+396	12,200	198	3.14	3.62	A.
August.....	448	96	230	14,100	-11,500	2,600	42.3	.671	.77	A.
September.....	275	97	145	8,630	-5,600	3,030	51.0	.810	.90	B.
The year.....	1,020	39	220	159,000	-572	158,000	219	3.48	47.20	
1909-10.										
October.....	97	78	86.9	5,340	-805	4,540	73.9	1.17	1.35	B.
November.....	.....	81	674	40,100	+19,700	59,800	1,000	15.9	17.74	A.
December.....	1,580	244	618	38,000	-15,600	22,400	364	5.78	6.66	A.
January.....	258	131	192	11,800	-105	11,700	191	3.03	3.49	A.
February.....	266	181	206	11,400	-490	10,900	197	3.13	3.26	A.
March.....	806	294	497	30,600	+4,690	35,300	574	9.11	10.50	A.
April.....	1,080	436	614	36,500	+4,720	41,200	698	11.0	12.27	A.
May.....	1,070	698	855	52,600	-2,980	49,600	807	12.8	14.76	A.
June.....	723	10	294	17,500	+2,450	20,000	336	5.33	5.94	A.
July.....	350	9	80.0	4,920	+1,260	6,180	100	1.59	1.83	A.
August.....	598	80	248	15,200	-13,400	1,800	29.3	.465	.54	A.
September.....	74	4	30.7	1,890	-350	1,540	25.9	.411	.46	A.
The year.....	.....	4	367	266,000	-910	265,000	366	5.81	78.80	
1910-11.										
October.....	395	5	193	11,900	+4,550	16,400	267	4.24	4.89	A.
November.....	1,120	25	467	27,800	+4,270	32,100	540	8.57	9.56	A.
December.....	550	181	277	17,000	-5,700	11,300	184	2.92	3.37	A.
January.....	225	160	194	11,900	-980	10,900	177	2.81	3.24	A.
February.....	158	94	122	6,780	-1,470	5,310	95.6	1.52	1.58	A.
March.....	238	84	125	7,690	+3,150	10,800	176	2.79	3.22	A.
April.....	410	238	284	16,900	+2,620	19,500	328	5.21	5.81	A.
May.....	900	112	516	31,700	+3,640	35,300	574	9.11	10.50	A.
June.....	862	25	432	25,700	+7,500	33,200	558	8.86	9.88	A.
July.....	410	13	219	13,500	-4,140	9,360	152	2.41	2.78	A.
August.....	442	12	211	13,000	-11,000	2,000	32.5	.516	.59	A.
September.....	608	0	467	27,800	-21,200	6,600	111	1.76	1.96	A.
The year.....	1,120	0	292	212,000	-18,800	193,000	267	4.24	57.38	
1911-12.										
October.....	0	0	0	0	+3,000	3,000	48.8	.775	.89	A.
November.....	950	0	201	12,000	+25,800	37,800	635	10.1	11.27	B.
December.....	830	421	620	38,100	-16,800	21,300	346	5.49	6.33	B.
January.....	539	182	340	20,900	0	20,900	340	5.40	6.23	B.
February.....	539	507	530	30,500	-9,450	21,000	365	5.79	6.24	B.
March.....	640	0	399	24,500	-12,200	12,300	200	3.17	3.66	B.
April.....	432	419	428	25,500	-2,100	23,400	393	6.24	6.96	B.
May.....	422	0	239	14,700	+37,100	51,800	842	13.4	15.45	B.
June.....	776	0	562	33,400	+1,080	34,500	580	9.21	10.28	B.
July.....	972	3.2	203	12,500	-3,700	8,800	143	2.27	2.62	B.
August.....	1,040	4.0	465	28,600	-26,600	2,000	32.5	.516	.59	B.
September.....	658	0	186	11,100	-8,310	2,790	46.9	.744	.83	B.
The year.....	1,040	0	347	252,000	-12,200	240,000	330	5.24	71.35	

Monthly discharge of Kachess River near Easton—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1912-13.										
October.....	406	0	123	7,560	-3,630	3,930	63.9	1.01	1.16	C.
November.....	788	0	199	11,800	-600	11,200	188	2.98	3.32	B.
December.....	938	0	587	36,100	-24,600	11,500	187	2.97	3.42	B.
January.....	723	210	409	25,100	-10,900	14,200	231	3.67	4.23	B.
February.....	415	188	277	15,400	-2,260	13,100	236	3.75	3.90	B.
March.....	313	183	216	13,300	-2,480	10,800	176	2.79	3.22	B.
April.....	226	178	197	11,700	+11,300	23,000	387	6.14	6.85	B.
May.....	974	207	483	29,700	+19,500	49,200	800	12.7	14.60	B.
June.....	992	78	369	22,000	+34,600	56,600	951	15.1	16.80	B.
July.....	96	80	88.7	5,450	+16,500	22,000	358	5.68	6.55	C.
August.....	282	76	119	7,320	-2,100	5,220	84.9	1.35	1.56	C.
September.....	740	13	286	17,000	-12,400	4,600	77.3	1.23	1.37	B.
The year.....	992	0	280	202,000	+22,900	225,000	311	4.94	66.98	
1913-14.										
October.....	1,030	350	790	48,600	-37,000	11,600	189	3.00	3.46	B.
November.....	283	23	212	12,600	+300	12,900	217	3.44	3.84	A.
December.....	304	126	219	13,500	-5,900	7,600	124	1.97	2.27	A.
January.....	176	100	155	9,530	+9,050	18,600	302	4.79	5.52	C.
February.....	160	64	150	8,330	-3,000	5,330	96.0	1.52	1.58	C.
March.....	10	2	6.2	381	+19,800	20,200	329	5.22	6.02	D.
April.....	748	6	184	10,900	+22,400	33,300	560	3.89	9.92	C.
May.....	885	2	334	20,500	+20,200	40,700	662	10.5	12.11	B.
June.....	490	10	275	16,400	+6,300	22,700	381	6.05	6.75	B.
July.....	694	152	400	24,600	-15,400	9,200	150	2.38	2.74	B.
August.....	927	218	795	48,900	-46,100	2,800	45.5	.722	.83	A.
September.....	927	269	559	33,300	-32,800	500	8.40	.133	.15	A.
The year.....	1,030	2	342	248,000	-62,200	185,000	256	4.06	55.19	
1914-15.										
October.....	445	2	224	13,800	-7,420	6,380	104	1.65	1.90	B.
November.....	243	132	202	12,000	+9,080	21,100	355	5.63	6.28	B.
December.....	243	0	154	9,490	-2,750	6,740	110	1.75	2.02	B.
January.....	76	0	18	1,110	+4,070	5,180	84.2	1.34	1.54	C.
February.....	0	0	0	0	+5,180	5,180	93.3	1.48	1.54	.....
March.....	3	0	1.19	73	+12,000	12,100	197	3.13	3.61	D.
April.....	175	1	17.4	1,040	+31,900	32,900	553	8.78	9.80	C.
May.....	7	0	3.19	196	+16,000	16,200	263	4.17	4.81	C.
June.....	994	0	404	24,000	-16,000	8,000	134	2.13	2.38	A.
July.....	978	581	840	51,600	-48,300	3,300	53.7	.85	.98	A.
August.....	550	137	257	15,800	-15,600	200	3.25	.05	.06	B.
September.....	134	0	88.2	5,250	-2,160	3,090	51.9	.82	.92	C.
The year.....	978	0	186	134,000	-14,000	120,000	166	2.63	35.84	
1915-16.										
October.....	131	0.0	30.9	1,900	+6,000	7,900	128	2.03	2.34	C.
November.....	0	.0	.0	0	+14,800	14,800	259	3.95	4.41	C.
December.....	0	.0	.0	0	+11,000	11,000	179	2.84	3.27	C.
January.....	0	.0	.0	0	+7,060	7,060	115	1.82	2.10	C.
February.....	0	.0	.0	0	+9,230	9,230	160	2.54	2.74	C.
March.....	540	.0	37.9	2,330	+26,300	28,300	460	7.30	8.42	C.
April.....	535	7.4	204	12,200	+18,500	30,700	516	8.19	9.14	C.
May.....	24	17.4	20.5	1,260	+50,000	51,300	834	13.24	15.26	C.
June.....	1,020	16.2	306	18,200	+49,400	67,600	1,140	18.09	20.18	B.
July.....	731	199	466	28,600	+14,400	43,000	699	11.10	12.80	B.
August.....	845	19.2	491	30,200	-19,900	10,300	168	2.64	3.04	B.
September.....	870	280	768	45,700	-44,200	1,500	25.2	.394	.44	A.
The year.....	1,020	.0	193	140,000	+143,000	283,000	390	6.18	84.14	
1916-17.										
October.....	512	308	455	28,000	-25,800	2,200	35.8	.559	.64	A.
November.....	493	0	139	8,260	-562	7,700	129	2.02	2.25	A.
December.....	0	0	0	0	+5,490	5,490	89.3	1.40	1.61	C.
January.....	0	0	0	0	+9,620	9,620	156	2.44	2.81	C.
February.....	0	0	0	0	+12,100	12,100	218	3.41	3.55	C.
March.....	0	0	0	0	+8,460	8,460	138	2.16	2.49	C.
April.....	0	0	0	0	+13,000	13,000	218	3.41	3.80	C.
May.....	1,170	0	256	15,700	+32,600	48,300	786	12.3	14.20	C.
June.....	1,170	492	999	59,400	+2,110	61,500	1,030	16.1	17.96	C.
July.....	960	184	516	31,700	+7,100	38,800	631	9.86	11.37	C.
August.....	1,350	236	993	61,000	-57,300	3,700	60.2	.940	1.08	C.
September.....	1,410	161	750	44,600	-44,100	500	8.40	.131	.15	C.
The year.....	1,410	0	344	249,000	-37,200	212,000	293	4.58	61.91	

Monthly discharge of Kachess River near Easton—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored. ^a	Without storage.	Mean.	Per square mile.		
1917-18.										
October.....	660	297	465	28,600	-25,400	3,200	52.0	0.812	0.94	A.
November.....	297	0	61.3	3,650	+910	4,560	76.6	1.20	1.34	B.
December.....	5	0	.32	19.7	+78,500	78,500	1,280	20.0	23.06	C.
January.....	1,020	0	633	38,900	+10,800	49,700	808	12.6	14.53	A.
February.....	0	0	0	0	+13,700	13,700	247	3.86	4.02	C.
March.....	0	0	0	0	+8,870	8,870	144	2.25	2.59	C.
April.....	610	0	107	6,370	+19,700	26,100	439	6.86	7.65	A.
May.....	1,060	167	541	33,800	+1,300	34,600	563	8.80	10.14	A.
June.....	910	260	500	29,800	+1,110	30,900	519	8.11	9.05	A.
July.....	1,230	109	834	51,300	-43,300	8,000	130	2.03	2.34	A.
August.....	566	167	257	15,800	-10,500	5,300	86.2	1.35	1.56	A.
September.....	1,290	455	1,050	62,500	-62,100	400	6.7	.105	.12	A.
The year.....	1,290	0	372	270,000	-6,320	264,000	365	5.70	77.34	
1918-19.										
October.....	792	0	244	15,000	-1,510	13,500	220	3.44	3.97	A.
November.....	0	0	0	0	+12,200	12,200	205	3.20	3.57	A.
December.....	0	0	0	0	+31,200	31,200	507	7.92	9.13	A.
January.....	0	0	0	0	+24,000	24,000	390	6.09	7.02	A.
February.....	1,330	0	216	12,000	-2,420	9,580	172	2.69	2.80	A.
March.....	506	155	337	20,700	-12,200	8,500	138	2.16	2.49	A.
April.....	495	0	360	21,400	+6,530	27,900	469	7.33	8.18	A.
May.....	1,310	0	471	28,900	+17,100	46,000	748	11.7	13.49	A.
June.....	453	0	24.9	1,480	+31,400	32,900	553	8.64	9.64	A.
July.....	1,110	0	408	25,100	-9,580	15,500	252	3.94	4.54	A.
August.....	1,630	1,120	1,460	90,100	-89,400	700	11.4	.178	.21	A.
September.....	1,120	0	125	7,440	-6,110	1,330	22.4	.350	.39	A.
The year.....	1,630	0	307	222,000	+1,210	223,000	308	4.81	65.43	

NOTE.—Maximum discharge, during period of record, 1,770 second-feet, 5 to 11 p. m., Aug. 2, 1919. Practically no flow when reservoir gates are closed.

Discharge Nov. 1 to 19, 1903, estimated by comparison with discharge of Cle Elum River near Roslyn; discharge for October, 1903, estimated by comparison with discharge of Snoqualmie River near Snoqualmie.

Yearly discharge of Kachess River near Easton.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1904.....	1,020	0	113	Aug.....	330	5.24	71.25	240,000
1905.....	932	17	98.9	Feb.....	247	3.92	53.18	179,000
1906.....	735	62	23.6	Aug.....	238	3.78	51.36	173,000
1907.....	1,760	29	33.0	Aug.....	325	5.16	69.95	235,000
1908.....	1,230	12	19.2	Oct.....	285	4.52	61.45	207,000
1909.....	1,020	39	42.3	Aug.....	219	3.48	47.20	158,000
1910.....	.....	4	25.9	Sept.....	366	5.81	78.80	265,000
1911.....	1,120	0	32.5	Aug.....	267	4.24	57.38	193,000
1912.....	1,040	0	32.5	Aug.....	330	5.24	71.35	240,000
1913.....	992	0	63.9	Oct.....	311	4.94	66.98	225,000
1914.....	1,030	2	8.40	Sept.....	256	4.06	55.19	185,000
1915.....	978	0	3.25	Aug.....	166	2.63	35.84	120,000
1916.....	1,020	0	25.2	Sept.....	390	6.18	84.14	283,000
1917.....	1,410	0	8.40	Sept.....	293	4.58	61.91	212,000
1918.....	1,290	0	6.7	Sept.....	365	5.70	77.34	264,000
1919.....	1,630	0	11.4	Aug.....	308	4.81	65.43	223,000
The period...	1,760	0	3.25	Aug., 1915	294	4.64	63.05	213,000

CLE ELUM RIVER NEAR ROSLYN (121).

Water-stage recorder 800 feet below temporary crib dam at outlet of Cle Elum Lake, 4 miles northwest of Roslyn, in Kittitas County. Staff gages read once or twice daily, in use prior to October 14, 1913.

Flow partly controlled by regulation in Cle Elum reservoir; monthly discharge without storage since January, 1906, determined from record of stage at reservoir.

Drainage area, 202 square miles (revised); measured on topographic maps.

Monthly discharge of Cle Elum River near Roslyn.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1903-4.							
October.....			475	2.35	2.71	29,200	D.
November.....	1,630	478	746	3.69	4.12	44,400	A.
December.....	3,900	425	1,020	5.05	5.82	62,800	B.
January.....	900	375	567	2.81	3.24	34,900	B.
February.....	565	240	367	1.82	1.96	21,100	B.
March.....	512	270	367	1.82	2.10	22,600	A.
April.....	3,900	285	1,970	9.75	10.88	117,000	B.
May.....	4,520	1,240	2,630	13.0	14.99	162,000	B.
June.....	4,140	1,670	2,680	13.3	14.84	159,000	B.
July.....	2,890	725	1,510	7.48	8.62	93,000	A.
August.....	705	330	517	2.56	2.95	31,800	A.
September.....	330	190	250	1.24	1.38	14,900	A.
The year.....	4,520	190	1,090	5.40	73.61	793,000	
1904-5.							
October.....	285	165	234	1.16	1.34	14,400	A.
November.....	725	190	391	1.94	2.16	23,300	B.
December.....	685	360	527	2.61	3.01	32,400	B.
January.....	408	215	269	1.33	1.53	16,500	B.
February.....	478	140	211	1.04	1.08	11,700	B.
March.....	1,590	495	1,160	5.74	6.62	71,000	B.
April.....	2,740	255	1,010	5.00	5.58	60,200	B.
May.....	2,490	965	1,450	7.18	8.28	89,200	B.
June.....	2,990	1,100	1,840	9.11	10.16	110,000	B.
July.....	1,080	548	733	3.63	4.18	45,100	B.
August.....	548	330	438	2.17	2.50	26,900	B.
September.....	453	270	314	1.55	1.73	18,700	B.
The year.....	2,990	140	717	3.55	48.17	519,000	

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored. ^a	Without storage.	Mean.	Per square mile.		
1905-6.										
October.....	1,670	442	887	54,500		54,500	887	4.39	5.06	B.
November.....	665	360	452	26,900		26,900	452	2.24	2.50	B.
December.....	442	300	352	21,600		21,600	352	1.74	2.01	B.
January.....	785	296	401	24,700	+1,930	26,600	433	2.14	2.47	B.
February.....	885	460	644	35,800	-980	34,800	627	3.10	3.23	B.
March.....	995	328	494	30,400	+2,590	33,000	537	2.66	3.07	B.
April.....	3,320	1,170	1,800	107,000	+2,990	110,000	1,850	9.16	10.22	B.
May.....	3,320	1,170	2,020	124,000	-2,150	122,000	1,980	9.80	11.30	B.
June.....	1,970		1,230	73,200	-1,850	71,400	1,200	5.94	6.63	B.
July.....		392	675	41,500	-2,910	38,600	628	3.11	3.58	B.
August.....	392	130	318	19,600	-950	18,600	302	1.50	1.73	B.
September.....	360	265	289	17,200	+760	18,000	302	1.50	1.67	B.
The year.....	3,320	130	796	576,000	-570	576,000	796	3.94	53.47	

^a Range in stage in Cle Elum Lake not available prior to Jan. 1, 1906.

Monthly discharge of Cle Elum River near Roslyn—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1906-7.										
October.....	4,040	296	831	51,100	+3,300	54,400	885	4.38	5.05	B.
November.....	17,700	650	2,650	158,000	-1,400	157,000	2,540	13.1	14.62	B.
December.....	650	460	522	32,100	-570	31,500	512	2.53	2.92	A.
January.....	530	328	426	26,200	-570	25,600	416	2.06	2.38	B.
February.....	1,360	.....	726	40,300	+570	40,900	736	3.64	3.79	B.
March.....	695	392	509	31,300	-1,900	29,400	478	2.37	2.73	A.
April.....	1,800	392	1,070	63,700	+6,360	70,100	1,180	5.84	6.52	A.
May.....	4,400	1,500	3,210	197,000	+3,070	200,000	3,250	16.1	18.56	A.
June.....	4,280	1,110	1,880	112,000	-4,540	107,000	1,800	8.91	9.94	A.
July.....	1,300	392	766	47,100	-1,220	45,900	746	3.69	4.25	A.
August.....	460	296	349	21,500	0	21,500	349	1.73	1.99	C.
September.....	328	236	292	17,400	0	17,400	292	1.45	1.62	C.
The year.....	17,700	236	1,100	798,000	+ 3,100	801,000	1,110	5.50	74.37	
1907-8.										
October.....	236	106	170	10,500	-1,390	9,110	148	.733	.85	B.
November.....	425	130	228	13,600	+2,400	16,000	269	1.33	1.48	B.
December.....	650	360	489	30,100	+630	30,700	499	2.47	2.85	A.
January.....	460	265	351	21,600	-2,240	19,400	315	1.56	1.80	B.
February.....	236	208	216	12,400	0	12,400	216	1.07	1.15	B.
March.....	1,360	208	605	37,200	+21,600	58,800	956	4.73	5.45	A.
April.....	3,440	530	1,430	85,100	+1,680	86,800	1,460	7.23	8.07	A.
May.....	2,980	1,570	2,240	138,000	+960	139,000	2,260	11.2	12.91	A.
June.....	5,380	1,430	2,810	167,000	+240	167,000	2,810	13.9	15.51	A.
July.....	3,200	650	1,750	108,000	-2,640	105,000	1,710	8.47	9.76	A.
August.....	940	392	544	33,400	-5,520	27,900	454	2.25	2.59	A.
September.....	885	208	379	22,600	-8,340	14,300	240	1.19	1.33	B.
The year.....	5,380	106	936	680,000	+ 7,380	686,000	945	4.68	63.75	
1908-9.										
October.....	425	84	232	14,300	-1,330	13,000	211	1.04	1.20	B.
November.....	835	236	374	22,300	+14,000	36,300	610	3.02	3.37	B.
December.....	425	236	319	19,600	-240	19,400	316	1.56	1.80	B.
January.....	320	200	248	15,200	-240	15,000	244	1.21	1.40	B.
February.....	290	175	224	12,400	-240	12,200	220	1.09	1.14	B.
March.....	730	175	321	19,700	+1,440	21,100	343	1.70	1.96	B.
April.....	1,570	565	938	55,800	+960	56,800	954	4.72	5.27	B.
May.....	3,450	1,130	2,000	123,000	+2,400	125,000	2,030	10.0	11.53	A.
June.....	5,380	1,330	2,740	163,000	-2,880	160,000	2,690	13.3	14.84	A.
July.....	1,460	645	1,020	62,700	-5,950	56,800	924	4.57	5.27	A.
August.....	862	296	556	34,200	-17,000	17,200	280	1.39	1.60	B.
September.....	302	203	270	16,100	-80	16,000	269	1.33	1.48	B.
The year.....	5,380	84	771	558,000	-9,160	549,000	758	3.75	50.86	
1909-10.										
October.....	320	224	267	16,400	-728	15,700	256	1.27	1.46	B.
November.....	9,940	245	2,160	129,000	+50,600	180,000	3,020	15.0	16.74	A.
December.....	6,220	613	1,230	75,600	-13,400	62,200	1,010	5.00	5.76	A.
January.....	790	412	553	34,000	-6,030	28,000	455	2.25	2.59	A.
February.....	478	385	436	24,200	+330	24,500	441	2.18	2.27	A.
March.....	3,090	419	1,220	75,000	+13,800	88,800	1,440	7.13	8.22	A.
April.....	5,650	922	2,060	123,000	+1,800	125,000	2,100	10.4	11.60	A.
May.....	4,960	1,670	2,700	166,000	+240	166,000	2,700	13.4	15.45	A.
June.....	2,480	910	1,410	83,900	-2,040	81,900	1,380	6.83	7.62	A.
July.....	976	422	735	45,200	-1,200	44,000	716	3.54	4.08	A.
August.....	916	347	610	37,500	-21,400	16,100	262	1.30	1.50	A.
September.....	374	158	206	12,300	-1,040	11,300	190	.941	1.05	B.
The year.....	9,940	158	1,140	822,000	+20,900	844,000	1,170	5.79	78.34	
1910-11.										
October.....	1,260	70	753	46,300	+14,300	60,600	936	4.88	5.63	B.
November.....	4,540	670	1,440	85,700	+5,120	90,800	1,530	7.57	8.45	A.
December.....	1,030	474	702	43,200	-16,000	27,200	442	2.19	2.52	A.
January.....	492	160	238	14,600	+10,100	24,700	402	1.99	2.29	A.
February.....	188	125	157	8,720	+2,880	11,600	209	1.03	1.07	A.
March.....	1,150	145	385	23,700	+7,140	30,800	501	2.48	2.86	A.
April.....	2,020	710	1,100	65,500	+1,440	66,900	1,120	5.54	6.18	A.
May.....	2,720	1,270	1,640	101,000	+1,680	103,000	1,680	8.32	9.59	A.
June.....	3,870	1,090	2,130	127,000	-2,760	124,000	2,080	10.3	11.49	A.
July.....	1,150	615	851	52,300	-8,300	44,000	716	3.54	4.08	A.
August.....	810	200	484	29,800	-13,400	16,400	267	1.32	1.52	A.
September.....	474	77	127	7,560	-14,700	22,300	375	1.86	2.08	B.
The year.....	4,540	70	836	605,000	+16,900	622,000	857	4.24	57.76	

Monthly discharge of Cle Elum River near Roslyn—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off (depth in inches on drainage area).	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1911-12.										
October.....	530	177	417	25,600	-16,800	8,800	143	0.708	0.82	A.
November.....	1,680	152	671	39,900	+19,600	59,500	1,000	4.95	5.52	A.
December.....	570	354	467	28,700	+2,160	30,900	503	2.49	2.87	A.
January.....	810	270	471	29,000	+960	30,000	488	2.42	2.79	B.
February.....	630	325	469	27,000	-1,200	25,800	449	2.22	2.39	B.
March.....	684	225	304	18,700	+1,440	20,100	327	1.62	1.81	B.
April.....	1,630	745	1,090	64,900	+1,560	66,500	1,120	5.54	6.18	B.
May.....	4,950	1,340	2,850	175,000	+600	176,000	2,860	14.2	16.37	B.
June.....	3,360	1,210	2,210	132,000	-1,560	130,000	2,180	10.8	12.05	B.
July.....	1,090	425	737	45,300	-2,280	43,000	699	3.46	3.99	B.
August.....	516	355	454	27,900	-7,740	20,200	329	1.63	1.88	B.
September.....	720	220	453	27,000	-13,200	13,800	232	1.15	1.28	B.
The year.....	4,950	152	883	641,000	-16,500	625,000	860	4.26	57.95	
1912-13.										
October.....	238	68	166	10,200	+5,580	15,800	257	1.27	1.46	B.
November.....	500	72	339	20,200	+2,620	22,800	383	1.90	2.12	B.
December.....	484	78	173	10,600	+13,200	23,800	387	1.92	2.21	B.
January.....	535	241	380	23,400	+480	23,900	389	1.93	2.22	B.
February.....	1,040	228	470	26,100	-95	26,000	468	2.32	2.42	B.
March.....	720	320	613	37,700	-17,100	20,600	335	1.66	1.91	A.
April.....	2,350	72	925	55,000	+19,200	74,200	1,250	6.19	6.91	A.
May.....	4,650	1,100	2,580	159,000	+4,320	163,000	2,650	13.1	15.10	A.
June.....	6,200	2,070	3,380	201,000	-2,690	198,000	3,330	16.5	18.41	A.
July.....	2,250	875	1,480	91,000	-2,540	88,500	1,440	7.13	8.22	A.
August.....	820	493	665	40,900	-12,600	28,300	460	2.28	2.63	A.
September.....	670	270	483	28,700	-8,580	20,100	338	1.67	1.86	A.
The year.....	6,200	68	972	704,000	+1,800	705,000	973	4.82	65.47	
1913-14.										
October.....	670	228	485	29,800	+3,000	32,800	533	2.64	3.04	A.
November.....	770	61	309	18,400	+17,400	35,800	602	2.98	3.32	A.
December.....	820	270	581	35,700	-19,300	16,400	267	1.32	1.52	A.
January.....	820	256	575	35,400	+2,050	37,400	608	3.01	3.47	A.
February.....	433	56	245	13,600	+1,180	14,800	266	1.32	1.38	A.
March.....	1,160	69	501	30,800	+11,600	42,400	690	3.42	3.94	A.
April.....	2,530	770	1,630	97,000	+4,560	102,000	1,720	8.52	9.51	A.
May.....	3,920	1,470	2,480	152,000	+1,870	154,000	2,510	12.4	14.30	A.
June.....	3,080	1,000	1,610	96,000	-936	95,000	1,600	7.92	8.84	A.
July.....	1,390	580	884	54,300	-5,400	48,900	795	3.94	4.54	A.
August.....	580	394	499	30,700	-15,200	15,500	252	1.25	1.44	A.
September.....	394	26	222	13,200	+2,240	15,400	259	1.28	1.43	A.
The year.....	3,920	26	839	607,000	+3,060	610,000	844	4.18	56.73	
1914-15.										
October.....	783	61	317	19,500	+5,090	24,600	400	1.98	2.28	A.
November.....	1,840	183	986	58,700	+10,800	69,500	1,170	5.79	6.46	A.
December.....	1,000	174	443	27,200	-5,130	22,100	359	1.78	2.05	A.
January.....	303	126	204	12,600	-2,820	9,780	159	.79	.91	A.
February.....	130	128	130	7,210	+451	7,660	138	.68	.71	A.
March.....	1,390	94	491	30,200	+9,870	40,100	652	3.23	3.72	A.
April.....	4,030	1,090	1,860	110,000	-1,130	109,000	1,830	9.06	10.11	A.
May.....	1,390	813	989	60,800	-499	60,300	981	4.86	5.60	A.
June.....	1,060	385	743	44,200	-10,200	34,000	571	2.83	3.16	A.
July.....	732	319	446	27,400	-7,870	19,500	317	1.57	1.81	A.
August.....	307	213	252	15,500	-1,450	14,000	228	1.13	1.30	A.
September.....	211	113	155	9,240	-1,130	8,110	136	.67	.75	A.
The year.....	4,030	61	585	423,000	-4,020	419,000	579	2.87	38.86	
1915-16.										
October.....	484	117	249	15,300	+6,720	22,000	358	1.77	2.04	.....
November.....	370	329	356	21,200	+11,400	32,600	548	2.71	3.02	A.
December.....	374	329	345	21,200	+1,480	22,700	369	1.83	2.11	A.
January.....	578	323	380	23,300	-7,680	15,600	254	1.26	1.45	A.
February.....	501	221	375	21,500	-645	20,900	362	1.79	1.93	A.
March.....	2,100	297	954	58,700	+8,730	67,400	1,100	5.45	6.28	A.
April.....	2,650	758	1,450	86,400	+4,430	90,800	1,530	7.57	8.45	A.
May.....	4,810	1,600	2,760	170,000	-24	170,000	2,760	13.7	15.79	A.
June.....	6,510	2,530	3,860	230,000	+450	230,000	3,870	19.2	21.42	B.
July.....	3,630	1,250	2,470	152,000	-2,620	149,000	2,420	12.0	13.83	A.
August.....	1,400	822	990	60,800	-8,380	52,400	852	4.22	4.86	A.
September.....	822	348	573	34,100	-10,200	23,900	402	1.99	2.22	A.
The year.....	6,510	117	1,230	894,000	+3,660	897,000	1,240	6.14	83.40	

Monthly discharge of Cle Elum River near Roslyn—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1916-17.										
October.....	342	114	184	11,300	-457	10,800	176	0.871	1.00	A.
November.....	154	131	143	8,510	+5,480	14,000	235	1.16	1.29	A.
December.....	152	135	140	8,620	+2,240	10,900	177	.876	1.01	A.
January.....	355	139	187	11,500	+2,330	13,800	224	1.11	1.28	A.
February.....	597	152	307	17,000	+5,410	22,400	403	2.00	2.08	A.
March.....	444	159	203	12,500	+3,170	15,700	255	1.26	1.45	A.
April.....	1,090	191	603	35,900	-1,080	34,800	585	2.90	3.24	A.
May.....	5,530	1,030	2,840	175,000	+6,760	182,000	2,960	14.6	16.83	B.
June.....	4,860	2,390	3,390	202,000	-2,360	200,000	3,360	16.6	18.52	A.
July.....	3,630	1,030	2,330	143,000	-3,390	140,000	2,280	11.3	13.03	A.
August.....	1,360	522	938	57,700	-17,800	39,900	649	3.22	3.71	A.
September.....	482	52.0	221	13,200	+3,490	16,700	281	1.39	1.55	A.
The year.....	5,530	52.0	962	696,000	+3,810	701,000	969	4.80	64.99	
1917-18.										
October.....	541	12	242	14,900	-3,710	11,200	182	.901	1.04	A.
November.....	173	17	85.1	5,060	+10,500	15,600	262	1.30	1.45	A.
December.....	11,900	55	2,710	167,000	+17,000	184,000	2,990	14.8	17.06	B.
January.....	8,140	764	1,860	114,000	-12,000	102,000	1,660	8.22	9.48	B.
February.....	1,000	126	487	27,000	+1,810	28,800	519	2.57	2.68	A.
March.....	940	256	394	24,200	+1,380	25,600	416	2.06	2.38	A.
April.....	2,580	793	1,420	84,500	+2,860	87,400	1,470	7.28	8.12	A.
May.....	3,520	1,120	2,080	128,000	+580	129,000	2,100	10.4	11.99	A.
June.....	3,990	1,320	2,540	151,000	-2,600	148,000	2,490	12.3	13.72	A.
July.....	1,250	513	866	53,200	-1,830	51,400	836	4.14	4.77	A.
August.....	940	390	581	35,700	-12,700	23,000	374	1.85	2.13	A.
September.....	874	206	365	21,700	-5,870	15,800	266	1.32	1.47	A.
The year.....	11,900	12	1,140	826,000	-4,660	821,000	1,130	5.59	76.29	
1918-19.										
October.....	362	206	275	16,900	+13,600	30,500	496	2.46	2.84	A.
November.....	662	262	438	26,100	+4,490	30,600	514	2.54	2.83	A.
December.....	3,630	355	1,190	73,200	+180	73,400	1,190	5.89	6.79	A.
January.....	2,260	282	760	46,800	+990	47,800	777	3.85	4.44	A.
February.....	688	297	411	22,800	-1,370	21,400	385	1.91	1.99	A.
March.....	732	124	339	20,800	+1,210	22,000	358	1.77	2.04	B.
April.....	2,860	853	1,410	83,800	+3,970	87,800	1,480	7.33	8.18	A.
May.....	5,090	1,390	2,440	150,000	-410	150,000	2,440	12.1	13.95	A.
June.....	2,860	1,620	2,160	128,000	-1,420	127,000	2,130	10.5	11.71	A.
July.....	1,950	785	1,300	80,000	-4,390	75,600	1,230	6.09	7.02	A.
August.....	895	393	648	39,800	-12,600	27,200	442	2.19	2.52	A.
September.....	400	200	297	17,700	-5,170	12,500	210	1.04	1.16	A.
The year.....	5,090	124	976	706,000	-920	706,000	975	4.83	65.47	

NOTE.—Maximum discharge, during period of record, 18,700 second-feet at 2 p. m. Nov. 15, 1906; minimum discharge practically zero at 6 p. m. Sept. 28, 1914, when reservoir gates were closed. Discharge for October, 1903, estimated by comparison with record of Snoqualmie River near Snoqualmie.

Yearly discharge of Cle Elum River near Roslyn.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1904.....	4,520	190	250	Sept.....	1,090	5.40	73.61	793,000
1905.....	2,990	140	234	Oct.....	717	3.55	48.17	519,000
1906.....	3,320	130	302	Aug. and Sept.	796	3.94	53.47	576,000
1907.....	17,700	236	292	Sept.....	1,110	5.50	74.37	801,000
1908.....	5,380	106	148	Oct.....	945	4.68	63.75	686,000
1909.....	5,380	84	211	Oct.....	758	3.75	50.86	549,000
1910.....	9,940	158	190	Sept.....	1,170	5.79	78.34	844,000
1911.....	4,540	70	209	Feb.....	857	4.24	57.76	622,000
1912.....	4,950	152	143	Oct.....	860	4.26	57.95	625,000
1913.....	6,200	68	257	Oct.....	973	4.82	65.47	705,000
1914.....	3,920	26	252	Aug.....	844	4.18	56.73	610,000
1915.....	4,030	61	136	Sept.....	579	2.87	38.86	419,000
1916.....	6,510	117	254	Jan.....	1,240	6.14	83.40	897,000
1917.....	5,530	52.0	176	Oct.....	969	4.80	64.99	701,000
1918.....	11,900	12	182	Oct.....	1,130	5.59	76.29	821,000
1919.....	5,090	124	210	Sept.....	975	4.83	65.47	706,000
The period...	17,700	12	136	Sept., 1915	938	4.65	63.09	680,000

TEANAWAY RIVER NEAR CLE ELUM (122).

Chain gage at highway bridge half a mile above mouth of river, and 4½ miles east of Cle Elum, in Kittitas County; below all diversions.

Drainage area, 205 square miles (revised); measured on topographic maps.

Monthly discharge of Teanaway River near Cle Elum.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
April.....	1,110	200	646	38,400	A.
May.....	1,520	634	857	52,700	A.
June.....	1,430	184	547	32,500	A.
July.....	187	32	96.6	5,940	A.
August.....	46	3.5	8.83	543	C.
September.....	71	3.0	8.29	493	C.
The period.....				131,000	
1909-10.					
October.....	62	32	40.1	2,470	B.
November.....	3,450	48	865	51,500	A.
Dccember.....	1,520	66	306	18,800	A.
January.....			150	9,220	C.
February.....			120	6,660	D.
March.....	3,760	404	1,470	90,400	C.
April.....	2,960	508	1,350	80,300	B.
May.....	1,630	558	974	59,900	C.
June.....	720	114	329	19,600	C.
July.....	114	23	62.4	3,840	B.
August.....	19	2.9	8.25	507	B.
September.....	8.8	6.8	7.81	465	B.
The year.....	3,760	2.9	475	344,000	

Monthly discharge of Teanaway River near Cle Elum—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1910-11.					
October.....	383	7.4	141	8,670	B.
November.....	2,420	63	439	26,100	B.
December.....	371	156	239	14,700	B.
January.....	266	109	179	11,000	C.
February.....	145	62	112	6,220	B.
March.....	1,880	73	598	36,800	B.
April.....	1,990	408	955	56,800	C.
May.....	1,220	460	697	42,900	C.
June.....	959	132	420	25,000	A.
July.....	132	17	46.2	2,840	A.
August.....	38	4	13.0	799	B.
September.....	60	4.6	31.9	1,900	A.
The year.....	2,420	4.4	323	234,000	
1912.					
May 21-31.....	1,340	495	727	15,900	B.
June.....	666	128	347	20,600	B.
July.....	149	19	63.5	3,900	B.
August.....	25	9	14.4	885	B.
September.....	43	16	25.7	1,530	B.
The period.....				42,800	
1912-13.					
October.....	61	17	31.0	1,910	B.
November.....	149	56	104	6,190	B.
December.....	202	39	89.7	5,520	B.
January.....			68	4,200	D.
February.....	1,380		328	18,200	C.
March.....	562	253	386	23,700	B.
April.....	1,930	345	1,150	68,600	B.
May.....	1,830	730	1,270	77,900	B.
June.....	1,530	349	748	44,500	B.
July.....	366	61	168	10,300	B.
August.....	57	10	22.4	1,370	B.
September.....	49	10	21.9	1,300	B.
The year.....	1,930		365	264,000	
1913-14.					
October.....	136	15	63	3,870	B.
November.....	205	47	108	6,420	B.
December.....	144	43	79	4,880	B.
January.....	642	51	204	12,500	B.
February.....	300	67	114	6,350	B.
March.....	1,320	248	657	40,400	B.
April.....	1,410	385	980	58,300	B.
May.....	1,410	320	725	44,500	B.
June.....	620	147	276	16,400	B.
July.....	144	12	53	3,230	B.
August.....	8	1	4	274	C.
September.....	27	6	14	805	C.
The year.....	1,410	1	274	198,000	

NOTE.—Monthly discharge for January and February, 1910, estimated by comparison with records at near-by gaging stations. Maximum discharge during period of record, 4,030 second-feet, Mar. 20, 1910; minimum discharge, 1 second-foot at 2 p. m. Aug. 6, 1914.

SWAUK CREEK NEAR CLE ELUM (123).

Staff gage $2\frac{1}{2}$ miles above mouth of creek and 12 miles east of Cle Elum, in Kittitas County; below all diversions.

Drainage area, 88 square miles (revised); measured on topographic maps.

Monthly discharge of Swauk Creek near Cle Elum.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
April.....	106	55	76.3	4,540	A.
May.....	92	29	48.6	2,990	A.
June.....	40	7.2	17.3	1,030	B.
July.....	8.3	2.4	4.94	304	B.
August.....	2.7	1.6	1.99	122	C.
September.....	1.6	1.3	1.34	80	C.
The period.....				9,070	
1909-10.					
October.....	8.9	1.4	6.73	414	B.
November.....	379	9.2	68.0	4,050	B.
December.....	242	24	67.1	4,130	B.
January.....			80	4,920	C.
February.....			70	3,890	C.
March.....	975	257	564	34,700	B.
April.....	409	206	278	16,500	A.
May.....	170	32	89.4	5,500	A.
June.....	31	8.6	18.1	1,080	A.
July.....	9.2	.7	2.25	138	A.
August.....	1.5	.5	.90	55.3	A.
September.....	4.8	.5	1.81	108	A.
The year.....	975	.5	104	75,500	
1910-11.					
October.....	19	7	11.7	719	A.
November.....	99	13	43.8	2,610	A.
December.....	31	20	24.7	1,520	B.
January.....	34	20	26.9	1,650	C.
February.....	28	12	19.7	1,090	B.
March.....	226	12	98.5	6,060	B.
April.....	196	74	117	6,960	B.
May.....	107	67	81.1	4,990	B.
June.....	67	20	37.2	2,210	A.
July.....	17	1.1	5.58	343	B.
August.....	5.6	.5	3.08	189	C.
September.....	6.1	.5	3.99	237	C.
The year.....	226	.5	39.5	28,600	

NOTE.—Monthly discharge for January and February, 1910, estimated by comparison with records of near-by streams.

TANEUM CREEK NEAR THORP (124).

Staff gage 6 miles northwest of Thorp, in Kittitas County; above diversions.
Drainage area, 76 square miles; measured on topographic maps.

Monthly discharge of Taneum Creek near Thorp.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1909.							
April.....	93	27	54.6	0.718	0.80	3,250	A.
May.....	142	70	95.5	1.26	1.45	5,870	A.
June.....	183	34	101	1.33	1.48	6,010	A.
July.....	40	12	24.9	.328	.38	1,530	A.
August.....	12	5.3	7.61	.100	.12	468	B.
September.....	27	4.0	6.87	.090	.10	409	B.
The period.....						17,500	
1909-10.							
October.....	18	7.8	14.3	.188	.22	879	A.
November.....	188	50	84.5	1.11	1.24	5,030	A.
December.....	154	20	63.6	.837	.96	3,910	B.
March.....	674	69	245	3.22	3.71	15,100	C.
April.....	555	212	297	3.92	4.37	17,700	C.
May.....	304	88	167	2.20	2.54	10,300	C.
June.....	88	24	50.8	.668	.75	3,020	B.
July.....	21	7.5	14.5	.191	.22	892	C.
August.....	7.5	6	6.8	.089	.10	418	C.
September.....	14	7.5	8.9	.117	.13	530	C.

NOTE.—Mean discharge for October, 1910, 18 second-feet; run-off, 1,110 acre-feet.

MANASTASH CREEK NEAR ELLENSBURG (125).

Staff gage $1\frac{1}{2}$ miles above mouth of Manastash Canyon, 2 miles below North Fork and $8\frac{1}{2}$ miles west of Ellensburg, in Kittitas County; above all important diversions. Drainage area, 76 square miles (revised); measured on topographic maps.

Monthly discharge of Manastash Creek near Ellensburg.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
April 5-30.....	97	41	68.7	3,540	A.
May.....	147	66	94.1	5,790	A.
June.....	194	41	94.3	5,610	A.
July.....	39	16	27.1	1,670	A.
August.....	28	9.2	14.0	861	A.
September.....	108	7.2	13.2	786	A.
The period.....				18,300	
1909-10.					
October.....	11	8.4	10.2	627	A.
November.....	244	10	48.8	2,900	A.
December.....	113	20	38.3	2,360	B.
January.....	57	24	43.1	2,650	C.
February.....	40	24	30.2	1,680	B.
March.....	682	55	277	17,000	C.
April.....	462	142	254	15,100	C.
May.....	415	139	234	14,400	B.
June.....	133	44	79.8	4,750	A.
July.....	43	17	27.5	1,690	A.
August.....	24	12	15.3	941	A.
September.....	16	11	13.8	821	A.
The year.....	682	8.4	89.7	64,900	
1910-11.					
October.....	19	12	14.2	873	A.
November.....	31	12	21.0	1,250	B.
December.....	20	15	17.2	1,060	B.
January.....	26	10	17.2	1,060	A.
February.....	13	9.5	10.8	600	A.
March.....	133	13	52.1	3,200	A.
April.....	128	43	74.7	4,440	A.
May.....	168	71	101	6,210	A.
June.....	228	51	114	6,780	A.
July.....	51	22	32.9	2,020	A.
August.....	22	7.9	14.4	885	B.
September.....	24	8.3	14.7	875	B.
The year.....	228	7.9	40.4	29,300	
1911-12.					
October.....	14	9.5	11.3	695	A.
November.....	34	13	18.8	1,120	B.
December.....	34	13	18.3	1,130	B.
January.....	64	15	25.3	1,560	D.
February.....	28	18	21.3	1,230	B.
March.....	98	16	31.6	1,940	B.
April.....	235	98	131	7,800	B.
May.....	372	149	245	15,100	B.
June.....	155	51	107	6,370	A.
July.....	62	18	34.1	2,100	A.
August.....	23	12	18.2	1,120	B.
September.....	16	9	11.4	678	C.
The year.....	372	9	56.2	40,800	
1912-13.					
October.....	12	10	11.1	682	C.
November.....	21	9	14.7	875	B.
December.....	15	11	11.8	726	B.
January.....			15.2	932	D.
February.....	55		28.8	1,600	C.
March.....	64	22	34.5	2,120	B.
April.....	257	31	129	7,660	B.
May.....	362	98	204	12,500	B.
June.....	397	92	210	12,500	B.
July.....	88	36	54.8	3,370	B.
August.....	35	6	19.6	1,200	B.
September.....	20	9	12.8	764	B.
The year.....	397	6	62.2	44,900	

Monthly discharge of Manastash Creek near Ellensburg—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1913-14.					
October.....	20	10	15.1	928	B.
November.....	18	13	15.5	922	B.
December.....	16	7	12.6	775	B.
January.....	38	13	23.0	1,410	B.
February.....	56	13	26.2	1,460	B.
March.....	172	34	94.7	5,820	B.
April.....	240	56	160	9,520	B.
May.....	292	108	173	10,600	B.
June.....	115	43	73.1	4,350	B.
July.....	42	18	27.5	1,690	B.
August.....	18	9	13.3	818	B.
September.....	17	9	11.9	708	B.
The year.....	292	7	54.0	39,000	

NOTE.—Maximum discharge, during period of record, 682 second-feet, Mar. 20, 1910; minimum discharge, 6 second-feet Aug. 27 and 28, 1913.

Yearly discharge of Manastash Creek near Ellensburg.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1910.....	682	8.4	10.2	Oct.....	89.7	64,900
1911.....	228	7.9	10.8	Feb.....	40.4	29,300
1912.....	372	9	11.3	Oct.....	56.2	40,800
1913.....	397	6	11.1	Oct.....	62.2	44,900
1914.....	292	7	11.9	Sept.....	54.0	39,000
The period.....	682	6	10.2	Oct., 1909.	60.4	43,800

WENAS CREEK NEAR SELAH (126).

Staff gage half a mile above mouth of creek and 3½ miles northwest of Selah, in Yakima County; below all diversions.

Drainage area, 192 square miles; measured on topographic maps.

Monthly discharge of Wenas Creek near Selah.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
April.....			18.5	1,100	D.
May.....			12.0	738	D.
June.....			11.5	684	D.
July.....			3.20	197	D.
August.....	10	2.0	4.45	274	C.
September.....	12	3.2	7.73	460	C.
October.....	7.5	2.0	4.22	259	C.
November.....	20	5.0	12.5	744	C.
December.....	42	2.0	23.7	1,460	C.
The period.....				5,920	

NACHES RIVER AT ANDERSON RANCH, NEAR NILE (127).

Staff gages half a mile below Lost Creek, 7 miles below Bumping River, and 11 miles above Nile, in Yakima County; above all except one small diversion.

Flow partly controlled by regulation in Bumping reservoir; monthly discharge without storage, beginning November, 1910, determined from record of stage at the reservoir.

Drainage area, 394 square miles (revised); measured on topographic maps.

Monthly discharge of Naches River at Anderson ranch near Nile.

Month.	Discharge in second-feet.				Run-off.		Accuracy.	
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.		
1909.								
April 24-30.....	1,500	1,120	1,320	3.35	0.87	18,300	A.	
May.....	3,500	1,340	2,040	5.18	5.97	125,000	A.	
June.....	5,350	1,500	2,880	7.31	8.16	171,000	A.	
July.....	1,850	508	1,050	2.66	3.07	64,600	A.	
August.....	508	246	320	.812	.94	19,700	A.	
September.....	267	189	209	.530	.59	12,400	B.	
The period.....							411,000	
1909-10.								
October.....	216	167	189	.480	.55	11,600	A.	
November.....	9,500	212	2,160	5.48	6.11	133,000	B.	
December.....	5,460	800	1,430	3.63	4.18	85,100	B.	
January.....	2,330	400	660	1.68	1.94	40,600	C.	
February.....	860	275	530	1.35	1.41	29,400	B.	
March.....	6,450	385	2,430	6.17	7.11	149,000	B.	
April.....	7,050	1,410	2,920	7.41	8.27	174,000	B.	
May.....	6,600	2,450	3,410	8.65	9.97	210,000	B.	
June.....	3,300	910	1,780	4.52	5.04	106,000	B.	
July.....	1,020	310	718	1.82	2.10	44,100	A.	
August.....	345	160	233	.591	.68	14,300	A.	
September.....	215	160	188	.477	.53	11,200	A.	
The year.....	9,500	160	1,390	3.53	47.89	1,010,000		

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1910-11.										
October.....	700	190	409	25,100	.....	25,100	409	1.04	1.20	A.
November.....	4,350	275	1,190	70,800	+3,000	73,800	1,240	3.15	3.51	A.
December.....	1,140	425	666	41,000	-3,800	37,200	605	1.54	1.78	A.
January.....	615	345	459	28,200	+18	28,200	459	1.17	1.35	B.
February.....	415	165	269	14,900	-10	14,900	268	.685	.71	B.
March.....	1,260	192	571	35,100	+196	35,300	574	1.47	1.70	A.
April.....	2,480	870	1,340	79,700	+1,260	81,000	1,360	3.48	3.88	A.
May.....	2,720	1,640	2,170	133,000	+1,940	135,000	2,200	5.63	6.49	A.
June.....	4,020	1,190	2,290	136,000	+24,100	160,000	2,690	6.88	7.68	A.
July.....	1,190	280	797	49,000	+3,780	52,800	859	2.20	2.54	A.
August.....	760	280	610	37,500	-19,100	18,400	299	.765	.88	B.
September.....	760	192	473	28,100	-10,300	17,800	299	.765	.85	A.
The year.....	4,350	165	938	678,000	+1,080	680,000	938	2.38	32.57	
1911-12.										
October.....	490	120	165	10,100	+1,320	11,400	185	.473	.55	A.
November.....	1,880	280	596	35,500	-1,190	34,300	576	1.47	1.64	A.
December.....	615	280	413	25,400	-1,960	23,400	381	.974	1.12	A.
January.....	1,300	160	545	33,500	+590	34,100	555	1.41	1.63	C.
February.....	660	312	528	30,400	-415	30,000	522	1.32	1.42	A.
March.....	760	220	358	22,000	-308	21,700	353	.896	1.03	A.
April.....	1,880	870	1,310	78,000	+833	78,800	1,320	3.35	3.74	A.
May.....	4,290	1,500	2,680	165,000	+16,100	181,000	2,940	7.46	8.60	A.
June.....	2,720	1,260	2,060	123,000	+14,900	138,000	2,320	5.89	6.57	A.
July.....	1,720	345	707	43,500	-1,040	42,500	691	1.75	2.02	B.
August.....	562	312	400	24,600	-7,620	17,000	276	.700	.81	B.
September.....	651	359	522	31,100	-16,600	14,500	244	.619	.69	B.
The year.....	4,290	120	856	622,000	+4,610	627,000	863	2.19	29.82	

Monthly discharge of Naches River at Anderson ranch near Nile—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1912-13.										
October.....	415	165	274	16,800	-5,690	11,100	181	0.459	0.53	A.
November.....	990	120	469	27,900	+120	28,000	471	1.20	1.34	A.
December.....	430	250	345	21,000	-1,070	20,100	327	.830	.96	A.
January.....	483	295	421	25,900	+217	26,100	424	1.08	1.24	D.
February.....	1,020	233	444	24,700	-70	24,600	443	1.12	1.17	C.
March.....	483	263	362	22,300	-87	22,200	361	.916	1.06	B.
April.....	2,810	340	1,480	87,800	+1,260	89,100	1,500	3.81	4.25	A.
May.....	4,900	1,480	3,000	185,000	+10,900	196,000	3,190	8.10	9.34	A.
June.....	6,020	2,330	3,370	201,000	+20,400	221,000	3,710	9.42	10.51	A.
July.....	2,330	690	1,520	93,400	-910	92,500	1,500	3.81	4.39	A.
August.....	1,080	474	769	47,300	-19,900	27,400	446	1.13	1.30	A.
September.....	910	294	488	29,000	-10,700	18,300	308	.782	.87	A.
The year.....	6,020	120	1,080	782,000	-5,530	776,000	1,070	2.72	36.96	
1913-14.										
October.....	483	233	336	20,700	-265	20,400	332	.843	.97	A.
November.....	572	294	395	23,500	+575	24,100	405	1.03	1.15	A.
December.....	500	156	287	17,700	-870	16,800	273	.693	.80	B.
January.....	2,810	156	970	59,700	+545	60,200	979	2.49	2.87	B.
February.....	400	251	310	17,200	-613	16,600	299	.759	.79	B.
March.....	1,630	400	973	59,800	+168	60,000	976	2.48	2.86	A.
April.....	2,810	800	2,010	120,000	+1,890	122,000	2,050	5.20	5.80	B.
May.....	2,810	1,630	2,110	130,000	+29,900	160,000	2,600	6.60	7.61	B.
June.....	3,050	1,150	1,690	101,000	-494	101,000	1,700	4.31	4.81	A.
July.....	1,220	384	696	42,800	-3,380	39,400	641	1.63	1.88	A.
August.....	620	392	502	30,900	-16,400	14,500	236	.599	.69	A.
September.....	830	311	426	25,400	-11,900	13,500	227	.576	.64	A.
The year.....	3,050	156	895	648,000	-844	648,000	896	2.27	30.87	

NOTE.—Maximum discharge during period of record, 9,500 second-feet, Nov. 24, 1909; minimum discharge, 120 second-feet, Oct. 8-26, 1911, and Nov. 1-5, 1912.

Yearly discharge of Naches River at Anderson ranch near Nile.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1910.....	9,500	160	188	Sept.....	1,390	3.53	47.89	1,010,000
1911.....	4,350	165	268	Feb.....	938	2.38	32.57	680,000
1912.....	4,290	120	185	Oct.....	863	2.19	29.82	627,000
1913.....	6,020	120	181	Oct.....	1,070	2.72	36.96	776,000
1914.....	3,050	156	227	Sept.....	896	2.27	30.87	648,000
The period...	9,500	120	181	Oct., 1912..	1,030	2.62	35.62	748,000

NACHES RIVER AT OAK FLAT, NEAR NILE (128).

Water-stage recorder (Pl. VIII, A) just above Oak Flat, three-fourths mile above intake of Selah Valley canal, 2 miles above Tieton River, and 8 miles southeast of Nile, in Yakima County. Staff or cantilever chain gages, read once or twice daily, in use prior to September 20, 1911.

Numerous small irrigation diversions above station cause a depletion of less than 5 per cent of natural flow. Flow partly controlled by regulation in Bumping reservoir; monthly discharge without storage, beginning November, 1910, determined from records of stage at reservoir.

Drainage area, 640 square miles (revised); measured on topographic maps.

Monthly discharge of Naches River at Oak Flat near Nile.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1904.							
June 25-30.....	3,000	2,250	2,560	4.00	0.89	30,500	C.
July.....	3,180	760	1,660	2.59	2.99	102,000	C.
August.....	664	274	390	.609	.70	24,000	C.
September.....	274	a139	a173	.270	.30	10,300	D.
The period.....						167,000	
1904-5.							
October.....	366	a181	a234	.366	.42	14,400	D.
November.....	2,430	208	713	1.11	1.24	42,400	C.
December.....	975	425	553	.864	1.00	34,000	C.
January.....	576	316	421	.658	.76	25,900	B.
February.....	760	208	364	.569	.59	20,200	B.
March.....	2,430	975	1,730	2.70	3.11	106,000	B.
April.....	3,000	864	1,470	2.30	2.57	87,500	B.
May.....	2,250	1,090	1,550	2.42	2.79	95,300	B.
June.....	4,310	1,530	2,360	3.69	4.12	140,000	B.
July.....	1,690	600	899	1.40	1.61	55,300	B.
August.....	680	390	487	.761	.88	29,900	B.
September.....	460	320	371	.580	.65	22,100	B.
The year.....	4,310		930	1.45	19.74	673,000	
1905-6.							
October.....	1,690	390	778	1.22	1.41	47,800	B.
November.....	630	390	467	.730	.81	27,800	B.
December.....	540	330	422	.659	.76	26,000	B.
January.....	840	390	513	.802	.92	31,500	B.
February.....	2,020	585	1,010	1.58	1.64	56,100	B.
March.....	2,380	730	996	1.56	1.80	61,200	B.
April.....	4,740	2,020	3,250	5.08	5.67	193,000	B.
May.....	4,220	1,690	2,810	4.39	5.06	173,000	B.
June.....	2,200	1,090	1,530	2.39	2.67	91,000	A.
July.....	1,090	390	676	1.06	1.22	41,600	A.
August.....	330	235	289	.452	.52	17,800	A.
September.....	330	235	267	.418	.47	15,900	A.
The year.....	4,740	235	1,080	1.69	22.95	783,000	
1906-7.							
October.....	1,090	235	a458	.716	.83	28,200	A.
November.....	21,100	460	3,620	5.66	6.32	215,000	B.
December.....	2,010	468	962	1.50	1.73	59,200	B.
January.....	801	372	569	.889	1.02	35,000	B.
February.....	2,280	635	1,420	2.22	2.31	78,900	B.
March.....	1,490	725	997	1.56	1.80	61,300	B.
April.....	3,440	772	2,020	3.16	3.53	120,000	B.
May.....	5,440	2,520	4,050	6.33	7.30	249,000	A.
June.....	4,970	1,750	2,660	4.16	4.64	158,000	A.
July.....	1,750	555	1,060	1.66	1.91	65,200	A.
August.....	555	330	419	.655	.76	25,800	A.
September.....	400	265	325	.508	.57	19,300	A.
The year.....	21,100	235	1,540	2.41	32.72	1,110,000	
1907-8.							
October.....	265	185	220	.344	.40	13,500	A.
November.....	1,130	210	325	.508	.57	19,300	A.
December.....	1,020	330	592	.925	1.07	36,400	A.
January.....	555	265	438	.684	.79	26,900	B.
February.....	475	265	337	.527	.57	19,400	B.
March.....	3,440	330	1,110	1.73	1.99	68,200	B.
April.....	6,060	662	2,350	3.67	4.10	140,000	A.
May.....	3,700	2,150	2,850	4.45	5.13	175,000	A.
June.....	6,340	2,150	3,720	5.81	6.48	221,000	A.
July.....	4,450	1,020	2,570	4.02	4.64	158,000	A.
August.....	894	398	568	.888	1.02	34,900	A.
September.....	398	224	294	.459	.51	17,500	B.
The year.....	6,340	185	1,280	2.00	27.27	930,000	

^a The records for 1904 are subject to great uncertainty on account of unreliable gage-height observations. The minimum flow for September is thought to have been more nearly 180 second-feet than 139 second-feet as derived from the questionable gage heights.

Monthly discharge of Naches River at Oak Flat near Nile—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1908-9.							
October.....	474	224	277	0.433	0.50	17,000	B.
November.....	1,160	332	642	1.00	1.12	38,200	A.
December.....	562	274	411	.642	.74	25,300	A.
January.....	1,170	202	576	.900	1.04	35,400	B.
February.....	650	371	476	.744	.77	26,400	B.
March.....	1,060	338	595	.930	1.07	36,600	A.
April.....	1,740	850	1,250	1.95	2.18	74,400	A.
May.....	3,200	1,470	2,240	3.50	4.04	138,000	A.
June.....	5,640	2,030	3,520	5.50	6.14	209,000	A.
July.....	2,340	640	1,400	2.19	2.52	86,100	A.
August.....	575	270	370	.578	.67	22,800	A.
September.....	270	195	228	.356	.40	13,600	A.
The year.....	5,640	195	998	1.56	21.19	723,000	
1909-10.							
October.....	270	195	229	.358	.41	14,100	A.
November.....	10,100	270	2,620	4.09	4.56	156,000	A.
December.....	6,160	640	1,650	2.58	2.97	101,000	A.
January.....	1,700	443	716	1.12	1.29	44,000	B.
February.....	864	443	558	.872	.91	31,000	B.
March.....	7,470	944	3,190	4.98	5.74	196,000	B.
April.....	8,100	1,840	3,600	5.62	6.27	214,000	B.
May.....	7,470	3,010	4,320	6.75	7.78	266,000	B.
June.....	3,840	1,230	2,320	3.62	4.04	138,000	B.
July.....	1,340	490	919	1.44	1.66	56,500	B.
August.....	443	268	346	.511	.62	21,300	B.
September.....	295	244	261	.408	.46	15,500	B.
The year.....	10,100	195	1,730	2.70	36.7	1,250,000	

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1910-11.										
October.....	864	244	522	32,100	.....	32,100	522	0.816	0.94	B.
November.....	3,210	363	1,360	80,900	+3,000	83,900	1,410	2.20	2.46	A.
December.....	1,340	540	784	48,200	-3,800	44,400	722	1.13	1.30	A.
January.....	515	325	401	24,700	+18	24,700	401	.631	.73	A.
February.....	325	190	269	14,900	-10	14,900	269	.423	.44	A.
March.....	1,620	190	683	42,000	+196	42,200	686	1.08	1.24	A.
April.....	2,940	950	1,580	94,000	+1,260	95,300	1,600	2.52	2.81	A.
May.....	3,360	2,200	2,570	158,000	+1,940	160,000	2,600	4.09	4.72	A.
June.....	5,090	1,420	3,040	181,000	+24,100	205,000	3,450	5.42	6.05	A.
July.....	1,370	325	879	54,000	+3,780	57,800	940	1.48	1.71	A.
August.....	710	325	575	35,400	-19,100	16,300	265	.417	.48	A.
September.....	740	220	481	28,600	-10,300	18,300	308	.484	.54	A.
The year.....	5,090	190	1,100	794,000	+1,080	795,000	1,100	1.72	23.42	
1911-12.										
October.....	582	154	226	13,900	+1,320	15,200	247	.388	.45	A.
November.....	2,120	287	662	39,400	-1,190	38,200	642	1.01	1.13	A.
December.....	640	270	417	25,600	-1,960	23,600	384	.604	.70	A.
January.....	1,360	163	585	36,000	+590	36,600	595	.930	1.07	A.
February.....	856	466	628	36,100	-415	35,700	621	.970	1.05	A.
March.....	967	308	432	26,600	-308	26,300	428	.669	.77	A.
April.....	2,620	1,080	1,710	102,000	+833	103,000	1,730	2.70	3.01	A.
May.....	5,870	2,080	3,890	239,000	+16,100	255,000	4,150	6.48	7.47	A.
June.....	3,530	1,480	2,730	162,000	+14,900	177,000	2,980	4.66	5.20	A.
July.....	1,470	416	797	49,000	-1,040	48,000	781	1.22	1.41	A.
August.....	640	328	436	26,800	-7,620	19,200	312	.488	.56	A.
September.....	640	393	542	32,300	-16,600	15,700	264	.412	.46	A.
The year.....	5,870	154	1,090	789,000	+4,610	794,000	1,090	1.72	23.28	

Monthly discharge of Naches River at Oak Flat near Nile—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1912-13.										
October.....	370	253	317	19,500	-5,690	13,800	224	0.350	0.40	A.
November.....	1,000	163	516	30,700	+120	30,800	518	.809	.90	B.
December.....	482	280	388	23,900	-1,070	22,800	371	.580	.67	B.
January.....	608	300	441	27,100	+217	27,300	444	.694	.80	B.
February.....	1,140	260	534	29,700	-70	29,600	533	.833	.87	B.
March.....	740	367	548	33,700	-87	33,600	546	.853	.98	B.
April.....	3,140	466	1,660	98,600	+1,260	99,900	1,680	2.62	2.92	C.
May.....	5,700	1,810	3,480	214,000	+10,900	225,000	3,660	5.72	6.60	C.
June.....	6,660	2,620	3,950	235,000	+20,400	1255,000	4,290	6.70	7.48	C.
July.....	2,620	848	1,720	106,000	-910	05,000	1,710	2.67	3.08	C.
August.....	1,080	549	849	52,200	-19,900	32,300	525	.820	.95	C.
September.....	890	367	561	33,400	-10,700	22,700	381	.595	.66	B.
The year.....	6,660	163	1,250	904,000	-5,530	898,000	1,240	1.94	26.31	
1913-14.										
October.....	549	280	415	25,500	-265	25,200	410	.641	.74	B.
November.....	608	390	483	28,700	+575	29,300	492	.769	.86	A.
December.....	549	260	354	21,800	-870	20,900	340	.531	.61	A.
January.....	3,090	241	1,120	68,900	+545	69,400	1,130	1.77	2.04	A.
February.....	549	339	407	22,600	-613	22,000	396	.619	.64	A.
March.....	2,100	521	1,280	78,800	+168	79,000	1,280	2.00	2.31	A.
April.....	3,690	1,030	2,460	146,000	+1,890	148,000	2,490	3.89	4.34	A.
May.....	3,910	2,100	2,720	167,000	+29,900	197,000	3,200	5.00	5.76	A.
June.....	3,690	1,330	1,970	117,000	-494	117,000	1,970	3.08	3.44	A.
July.....	1,490	440	832	51,200	-3,380	47,800	777	1.21	1.40	A.
August.....	639	440	535	32,900	-16,400	16,500	268	.419	.48	A.
September.....	670	369	493	29,300	-11,900	17,400	292	.456	.51	B.
The year.....	3,910	241	1,090	790,000	-844	790,000	1,090	1.70	23.13	
1914-15.										
October.....	645	157	356	21,900	+1,860	23,800	387	.605	.70	A.
November.....	2,480	256	1,140	67,700	+9,430	77,100	1,290	2.02	2.25	A.
December.....	1,120	348	658	40,400	-11,500	28,900	470	.734	.85	B.
January.....	344	147	259	15,900	+1,230	17,100	278	.434	.50	B.
February.....	277	178	228	12,700	-32	12,700	229	.358	.37	A.
March.....	1,460	243	747	45,900	+2,640	48,500	789	1.23	1.42	A.
April.....	4,340	1,200	2,290	136,000	+9,510	146,000	2,450	3.83	4.27	A.
May.....	1,510	843	1,100	67,900	+18,600	86,500	1,410	2.20	2.54	A.
June.....	1,200	486	794	47,200	+3,560	50,800	854	1.33	1.48	B.
July.....	742	353	560	34,400	-13,400	21,000	342	.534	.62	B.
August.....	950	298	486	29,900	-19,700	10,200	166	.259	.30	B.
September.....	271	141	172	10,200	-1,740	8,500	143	.223	.25	B.
The year.....	4,340	141	732	530,000	+458	531,000	733	1.15	15.55	
1915-16.										
October.....	340	138	201	12,300	+902	13,200	215	.336	.39	B.
November 1-15....	559	267	413	12,300	-195	12,100	407	.636	.35	B.
April.....	4,700	2,020	3,150	187,000	-248	187,000	3,140	4.91	5.48	C.
May.....	7,270	2,820	4,470	275,000	+4,810	280,000	4,550	7.11	8.20	B.
June.....	7,530	3,940	5,380	320,000	+25,500	346,000	5,810	9.08	10.13	B.
July.....	7,530	1,830	3,970	244,000	-532	243,000	3,950	6.17	7.11	B.
August.....	2,080	920	1,350	83,300	-6,110	77,200	1,260	1.97	2.27	B.
September.....	944	426	668	39,700	-17,600	22,100	371	.58	.65	B.
1916-17.										
October.....	430	238	311	19,100	-4,170	14,930	243	.390	.44	B.
April.....	1,490	216	612	36,400	+3,000	39,400	662	1.03	1.15	A.
May.....	6,000	1,160	3,240	200,000	+20,000	220,000	3,580	5.59	6.44	A.
June.....	6,360	2,560	4,190	250,000	+9,260	259,000	4,350	6.80	7.59	A.
July.....	4,680	952	2,700	166,000	-1,370	165,000	2,680	4.19	4.83	A.
August.....	1,000	640	811	49,900	-17,900	32,000	520	.812	.94	A.
September.....	620	306	511	30,400	-13,600	16,800	282	.441	.49	A.
October.....	290	174	203	12,500	-790	11,700	190	.297	.34	A.

NOTE.—Maximum discharge during period of record, 21,900 second-feet during morning of Nov. 15, 1906; minimum discharge, 141 second-feet (disregarding unreliable minimum, Sept. 18-21, 1904) at 2 a. m. Sept. 25, 1915.

Yearly discharge of Naches River at Oak Flat near Nile.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
			Mean.					Month.
1905.....	4,310	.....	234	Oct.....	930	1.45	19.74	673,000
1906.....	4,740	235	267	Sept.....	1,080	1.69	22.95	783,000
1907.....	21,100	235	325	Sept.....	1,540	2.41	32.72	1,110,000
1908.....	6,340	185	220	Oct.....	1,280	2.00	27.27	930,000
1909.....	5,640	195	228	Sept.....	998	1.56	21.19	723,000
1910.....	10,100	195	229	Oct.....	1,730	2.70	36.71	1,250,000
1911.....	5,090	190	265	Aug.....	1,100	1.72	23.42	795,000
1912.....	5,870	154	247	Oct.....	1,090	1.72	23.28	794,000
1913.....	6,660	163	224	Oct.....	1,240	1.94	26.31	898,000
1914.....	3,910	241	268	Aug.....	1,090	1.70	23.13	790,000
1915.....	4,340	141	143	Sept.....	733	1.15	15.55	531,000
The period.	21,100	141	143	Sept., 1915	1,160	1.82	24.75	843,000

NACHES RIVER BELOW TIETON RIVER, NEAR NACHES (129).

Water-stage recorder 600 feet below Tieton River, 500 feet above intake of Wapatox canal, and 5 miles northeast of Naches, in Yakima County. Staff gages, read once or twice daily, in use prior to December 7, 1916.

Selah Valley, Tieton, and numerous small canals divert water above the gaging station. Flow partly controlled by regulation in Bumping reservoir. Natural monthly discharge, 1909 to 1912, estimated from record of stage at reservoir and by adding diversion of Selah Valley and Tieton canals.

Drainage area, 942 square miles (revised); measured on topographic maps.

Monthly discharge of Naches River below Tieton River near Naches.

Month.	Observed discharge of river in second-feet.			Run-off in acre-feet.				Natural discharge in second-feet.		Run- off in inches.	Accu- racy.
	Maximum.	Minimum.	Mean.	River.	Diverted.	Stored.	Natural.	Mean.	Per square mile.		
1905.											
August 4-31....	1,080	435	608	33,800	.....	.....	.....	.....	.....	.....
September.....	595	385	459	27,300	.....	.....	.....	.....	.....	.....
October 1-28....	2,040	435	1,050	58,400	.....	.....	.....	.....	.....	.....
The period....	.....	.....	.....	120,000	.....	.....	.....	.....	.....	.....
1908-9.											
November.....	.....	.....	1,040	61,900	.....	.....	61,900	1,040	1.10	1.23	C.
December.....	.....	.....	655	40,300	.....	.....	40,300	655	.695	.80	C.
January.....	.....	.....	945	58,100	.....	.....	58,100	945	1.00	1.15	C.
February.....	.....	.....	765	42,500	.....	.....	42,500	765	.812	.85	C.
March.....	.....	.....	1,000	61,500	.....	.....	61,500	1,000	1.06	1.22	C.
April.....	2,610	1,430	1,950	116,000	.....	.....	116,000	1,950	2.07	2.31	C.
May.....	5,600	2,300	3,580	220,000	6,000	.....	226,000	3,680	3.91	4.51	C.
June.....	9,180	2,960	5,840	348,000	6,500	.....	354,000	5,950	6.32	7.05	C.
July.....	3,150	1,110	2,060	127,000	6,580	.....	134,000	2,180	2.31	2.66	C.
August.....	1,110	518	700	43,000	6,520	.....	49,500	805	.855	.99	C.
September.....	518	410	476	28,300	5,410	.....	33,700	566	.601	.67	C.
The period....	.....	.....	.....	1,150,000	31,000	.....	1,180,000	.....	.....	.....

Monthly discharge of Naches River below Tieton River near Naches—Continued.

Month.	Observed discharge of river in second-feet.			Run-off in acre-feet.				Natural discharge in second-feet.		Run-off in inches.	Accuracy.
	Maximum.	Minimum.	Mean.	River.	Diverted.	Stored.	Natural.	Mean.	Per square mile.		
1909-10.											
October.....	460	360	406	25,000	4,000	.....	29,000	472	0.501	0.58	C.
November.....	18,800	460	4,620	275,000	.....	.....	275,000	4,620	4.90	5.47	C.
December.....	10,200	850	2,580	159,000	.....	.....	159,000	2,580	2.74	3.16	C.
January.....	2,420	680	1,090	67,000	.....	.....	67,000	1,090	1.16	1.34	C.
February.....	1,570	740	983	54,600	.....	.....	54,600	983	1.04	1.08	C.
March.....	10,200	1,140	4,880	300,000	.....	.....	300,000	4,880	5.18	5.97	C.
April.....	9,000	2,670	4,780	281,000	1,580	.....	285,000	4,810	5.11	5.70	C.
May.....	9,600	4,110	5,670	349,000	7,810	.....	357,000	5,810	6.17	7.11	C.
June.....	5,870	1,830	3,280	195,000	9,160	.....	204,000	3,430	3.64	4.06	C.
July.....	1,830	740	1,370	84,200	9,590	.....	93,800	1,530	1.62	1.87	C.
August.....	680	418	537	33,000	8,630	.....	41,600	677	.719	.83	C.
September.....	465	360	404	24,000	6,720	.....	30,700	533	.566	.63	C.
The year.....	18,800	360	2,550	1,850,000	47,500	.....	1,900,000	2,620	2.78	37.80	
1910-11.											
October.....	1,830	465	883	54,300	4,100	.....	58,400	950	1.01	1.16	C.
November.....	6,000	565	2,630	156,000	.....	+2,900	159,000	2,670	2.83	3.16	C.
December.....	2,420	815	1,200	73,800	.....	-3,690	70,100	1,140	1.21	1.40	C.
January.....	870	545	642	39,500	.....	+3	39,500	642	.632	.79	C.
February.....	495	410	456	25,300	.....	-31	25,300	456	.484	.50	C.
March.....	2,260	410	1,040	64,000	.....	+221	64,200	1,040	1.10	1.27	C.
April.....	3,110	1,350	1,960	117,000	4,840	+1,320	123,000	2,070	2.20	2.46	C.
May.....	4,940	2,740	3,270	201,000	9,590	+2,910	213,000	3,460	3.67	4.23	B.
June.....	7,500	1,830	4,180	249,000	12,500	+23,300	285,000	4,790	5.08	5.67	B.
July.....	1,830	545	1,200	73,800	15,200	+3,670	92,700	1,510	1.60	1.84	B.
August.....	1,350	495	801	49,300	14,200	-20,000	43,500	707	.751	.87	B.
September.....	1,350	410	693	41,200	8,910	-9,960	40,100	674	.715	.80	B.
The year.....	7,500	410	1,580	1,140,000	69,300	+643	1,210,000	1,680	1.78	24.15	
1911-12.											
October.....	600	320	363	22,300	3,190	+1,560	27,000	439	.466	.54	B.
November.....	4,940	450	1,020	60,700	1,270	-1,190	60,800	1,020	1.08	1.20	B.
December.....	870	450	638	39,200	563	-1,960	37,800	615	.653	.75	B.
January.....	2,280	350	963	59,200	.....	+590	59,800	973	1.03	1.19	D.
February.....	1,450	730	1,060	61,000	.....	-415	60,600	1,050	1.11	1.20	B.
March.....	1,570	555	757	46,500	.....	-308	46,200	751	.797	.92	B.
April.....	3,640	1,690	2,380	142,000	1,680	+833	145,000	2,440	2.59	2.89	B.
May.....	7,960	2,580	5,030	309,000	14,100	+16,100	339,000	5,510	5.85	6.74	B.
June.....	5,650	1,760	3,860	230,000	18,000	+14,900	263,000	4,420	4.69	5.23	B.
July.....	2,580	505	1,120	68,900	17,200	-1,040	85,100	1,380	1.46	1.68	B.
August.....	682	402	536	33,000	18,400	-7,620	43,800	712	.756	.87	B.
September.....	918	515	630	37,500	11,600	-16,600	32,500	546	.580	.65	B.
The year.....	7,960	320	1,530	1,110,000	86,000	+4,850	1,200,000	1,650	1.75	23.86	
1912.											
October.....	530	344	435	26,700	5,260	-5,690	26,300	428	.454	.52	B.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1915.					
May 10-31.....	2,200	980	1,370	59,800	B.
June.....	1,540	420	832	49,500	B.
July.....	980	400	518	31,900	B.
August.....	940	298	479	29,400	B.
September.....	314	188	247	14,700	C.
The period.....				185,000	
1916.					
April 13-30.....	5,910	2,750	4,200	150,000	B.
May.....	9,960	3,250	5,510	338,000	B.
June.....	11,600	4,590	7,000	416,000	B.
July.....	10,300	2,390	5,250	323,000	B.
August.....	2,590	927	1,600	98,600	B.
September.....	1,160	471	741	44,100	B.
The period.....				1,370,000	

Monthly discharge of Naches River below Tieton River near Naches.—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1916-17.					
October.....	553	409	463	28,500	C.
November.....	713	307	473	28,100	C.
December.....			406	25,000	D.
January.....			496	30,500	D.
February.....			582	32,300	C.
March.....	511	348	403	24,800	B.
April.....	2,000	360	894	53,200	A.
May.....	7,900	1,480	4,150	255,000	A.
June.....	8,260	3,700	5,760	343,000	A.
July.....	6,320	1,200	3,690	227,000	A.
August.....	1,200	563	904	55,600	A.
September.....	607	327	476	28,300	B.
The year.....	8,260		1,560	1,130,000	
1917-18.					
October.....	413	234	302	18,600	C.
November.....	460	205	297	17,700	C.
December.....	15,600	271	4,050	249,000	C.
January.....	14,100	1,460	4,090	251,000	C.
February.....	2,010	1,200	1,610	89,400	B.
March.....	2,060	1,010	1,260	77,500	B.
April.....	3,460	1,650	2,260	134,000	B.
May.....	3,970	1,550	2,640	162,000	B.
June.....	5,370	1,380	3,140	187,000	B.
July.....	1,340	432	804	49,400	B.
August.....	675	386	519	31,900	B.
September.....	369	202	300	17,900	C.
The year.....	15,600	202	1,780	1,290,000	
1918-19.					
October.....	1,100	411	531	32,600	B.
November.....	640	365	494	29,400	B.
December.....	1,750	502	921	56,600	A.
January.....	10,300	661	2,270	140,000	A.
February.....	1,700	940	1,190	66,300	A.
March.....	2,260	873	1,100	67,500	A.
April.....	3,880	1,750	2,590	154,000	A.
May.....	5,560	2,260	3,410	210,000	A.
June.....	3,880	2,140	2,960	176,000	A.
July.....	2,380	576	1,470	90,600	A.
August.....	621	449	557	34,200	B.
September.....	601	322	442	26,300	B.
The year.....	10,300	322	1,500	1,080,000	

NOTE.—Maximum discharge during period of record, 18,800 second-feet at 8 a. m. Nov. 24, 1909; minimum discharge, 202 second-feet, Nov. 20, 1917, and Sept. 23, 1918. Discharge November, 1908, to March, 1909, estimated from combined flow at gaging stations on Naches River at Oak Flat and on Tieton River below Oak Creek. Record of diversion in Selah Valley canal not available for computing natural flow after October, 1912.

Yearly discharge of Naches River below Tieton River near Naches.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maxi- mum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
			Mean.					Month.
1910.....	18,800	360	472	Oct.....	2,620	2.78.	37.80	1,900,000
1911.....	7,500	410	456	Feb.....	1,680	1.78	24.15	1,210,000
1912.....	7,960	320	439	Oct.....	1,650	1.75	23.86	1,200,000
1917.....	8,260		403	Mar.....	^a 1,560			^a 1,130,000
1918.....	15,600		297	Nov.....	^a 1,780			^a 1,290,000
1919.....	10,300		442	Sept.....	^a 1,500			^a 1,080,000
The period.	18,800	202	297	Nov., 1917.				

^a No correction for diversions above gaging station nor for storage in Bumping reservoir.

NACHES RIVER NEAR NORTH YAKIMA (130).

Staff or cantilever chain gages below all diversions, half a mile above the mouth of river and 2 miles northwest of North Yakima, in Yakima County.

Flow partly controlled by regulation in Bumping reservoir, after November, 1910. Large diversions for irrigation above gaging station.

Drainage area, 1,120 square miles; measured on topographic maps.

Monthly discharge of Naches River near North Yakima.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1896.					
August.....	1,640	490	849	52,200	C.
September.....	490	350	417	24,800	C.
October.....	450	310	347	21,300	C.
November.....	5,200	335	1,710	105,000	C.
December.....	2,950	1,450	1,940	117,000	C.
The period.....				320,000	
1898.					
January ^a			500	30,700	D.
February ^a			3,000	167,000	D.
March.....	2,130	913	1,510	92,700	C.
April.....	5,800	1,020	3,160	188,000	C.
May.....	7,480	4,120	5,199	319,000	C.
June.....	6,640	2,480	4,500	268,000	C.
July.....	2,870	1,020	1,800	111,000	C.
August.....	1,020	385	594	36,500	C.
September.....	607	325	362	21,500	C.
The period.....				1,230,000	
1898-99.					
October.....	811	325	445	27,400	C.
November.....	709	385	510	30,300	C.
December.....	2,870	225	580	35,700	C.
January.....	3,700	445	1,420	87,300	C.
February.....	2,130	1,020	1,400	77,800	C.
March.....	1,130	709	841	51,700	C.
April.....	2,480	913	1,760	105,000	C.
May.....	5,590	1,970	3,860	237,000	C.
June.....	7,070	4,750	6,070	361,000	C.
July.....	5,970	2,580	4,570	281,000	C.
August.....	2,370	920	1,440	88,600	C.
September.....	920	570	703	41,800	C.
The year.....	7,070	225	1,970	1,420,000	
1899-1900.					
October.....	1,350	498	748	46,000	C.
November.....	7,470	735	2,490	148,000	C.
December.....	5,650	1,120	2,760	170,000	C.
January.....	9,710	1,470	2,900	178,000	C.
February.....	1,600	1,020	1,240	68,900	C.
March.....	4,090	1,120	2,650	163,000	C.
April.....	5,010	1,730	2,890	172,000	C.
May.....	5,010	1,600	3,080	189,000	C.
June.....	2,950	1,120	1,840	109,000	C.
July.....	1,020	425	616	37,900	C.
August.....	498	250	346	21,300	C.
September.....	570	300	386	23,000	C.
The year.....	9,710	250	1,830	1,339,000	
1900-1901.					
October.....	2,010	300	684	42,100	C.
November.....	1,470	920	1,240	73,800	C.
December.....	5,650	1,350	2,670	164,000	C.
January.....	3,810	920	1,590	97,800	C.
February.....	4,370	828	1,610	89,400	C.
March.....	9,070	1,730	3,380	208,000	C.
April.....	2,760	1,600	2,220	132,000	C.
May.....	8,750	3,160	5,440	334,000	C.
June.....	6,530	2,670	3,940	234,000	C.
July.....	2,760	1,120	1,930	121,000	C.
August.....	1,120	362	662	40,700	C.
September.....	394	300	322	19,200	C.
The year.....	9,070	300	2,150	1,569,000	

^a Approximate.

Monthly discharge of Naches River near North Yakima—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- raey.
	Maximum.	Minimum.	Mean.		
1901-2.					
October.....	362	250	271	16,700	C.
November.....	6,290	362	1,090	64,900	C.
December.....	3,810	735	1,600	98,400	C.
January.....	5,650	735	1,940	119,000	C.
February.....	2,150	650	1,210	67,200	C.
March.....	1,470	1,020	1,210	74,500	C.
April.....	5,010	1,120	2,640	157,000	C.
May.....	8,750	2,310	5,280	325,000	C.
June.....	5,010	2,760	3,780	225,000	C.
July.....	2,760	1,120	1,840	113,000	C.
August.....	1,120	300	589	36,200	C.
September.....	495	200	263	15,600	C.
The year.....	8,750	200	1,810	1,310,000	
1902-3.					
October.....	495	300	390	23,900	C.
November.....	1,350	495	820	48,800	C.
December.....	1,600	650	975	60,000	C.
January.....	7,470	1,240	2,350	145,000	C.
February.....	1,470	920	1,080	60,200	C.
March.....	3,580	920	1,360	83,300	C.
April.....	4,050	1,860	2,620	156,000	C.
May.....	8,750	3,150	5,700	351,000	C.
June.....	11,300	5,330	8,460	503,000	C.
July.....	4,050	1,120	2,490	153,000	C.
August.....	1,020	300	585	36,000	C.
September.....	495	200	296	17,600	C.
The year.....	11,300	200	2,260	1,640,000	
1903-4.					
October.....	2,760	250	1,670	103,000	C.
November.....	3,810	1,350	1,970	117,000	C.
December.....	6,290	1,020	2,240	138,000	C.
January.....	2,010	874	1,160	71,300	C.
February.....	828	652	719	41,400	C.
March.....	1,600	570	977	60,100	C.
April.....	11,700	1,020	6,360	378,000	C.
May.....	9,710	2,950	5,480	337,000	B.
June.....	6,560	2,150	4,160	248,000	B.
July.....	4,090	780	2,060	127,000	B.
August.....	780	210	436	26,800	B.
September.....	260	160	189	11,200	B.
The year.....	11,700	160	2,280	1,660,000	
1904-5.					
October.....	560	200	284	17,500	B.
November.....	2,260	230	832	49,500	D.
December.....	1,440	670	816	50,200	D.
January.....	820	478	577	35,500	D.
February.....	1,000	380	537	29,800	D.
March.....	2,520	1,170	1,980	122,000	D.
April.....	2,650	698	1,370	81,600	D.
May.....	2,260	1,170	1,520	93,300	D.
June.....	3,370	1,640	2,280	135,000	D.
July.....	1,760	478	882	54,200	D.
August.....	530	100	268	16,500	D.
September.....	380	100	184	11,000	D.
The year.....	3,370	100	961	696,000	
1905-6.					
October.....	1,540	237	730	44,900	D.
November.....	584	334	432	25,700	D.
December.....	478	254	350	21,500	D.
January.....	800	285	395	24,300	D.
February.....	2,190	525	1,030	57,200	D.
March.....	2,340	720	982	60,400	D.
April.....	4,500	1,900	3,120	186,000	D.
May.....	4,890	1,470	3,040	187,000	D.
June.....	2,630	910	1,550	92,200	D.
July.....	1,210	185	646	39,700	D.
August.....	150	30	67.6	4,160	D.
September.....	185	30	74.8	4,450	D.
The year.....	4,890	30	1,030	748,000	

Monthly discharge of Naches River near North Yakima—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906-7.					
October.....	1,570	45	386	23,700	D.
November.....	21,900	525	4,290	255,000	C.
December.....	4,700	1,600	2,440	150,000	B.
January.....			950	58,400	C.
February.....			2,520	140,000	C.
March.....	2,540	1,180	1,680	103,000	B.
April.....	6,050	1,280	3,490	208,000	B.
May.....	8,620	3,680	6,100	375,000	B.
June.....	8,100	1,820	3,600	214,000	B.
July.....	1,820	375	830	51,000	B.
August.....	400	90	224	13,800	B.
September.....	280	105	184	10,900	B.
The year.....	21,900	45	2,210	1,600,000	
1907-8.					
October.....	140	90	105	6,460	B.
November.....	940	120	231	13,700	C.
December.....	2,190	425	840	51,600	C.
January.....	810	475	620	38,100	C.
February.....	600	450	527	30,300	B.
March.....	4,730	565	2,100	129,000	B.
April.....	9,770	1,520	4,090	243,000	B.
May.....	6,200	3,460	4,570	281,000	B.
June.....	8,500	2,900	4,970	296,000	B.
July.....	5,280	860	3,230	199,000	B.
August.....	860	248	492	30,300	B.
September.....	248	178	219	13,000	B.
The year.....	9,770	90	1,830	1,330,000	
1908-9.					
October.....	805	148	268	16,500	B.
November.....	1,760	348	762	45,300	C.
December.....	560	120	366	22,500	D.
January.....	2,070	348	880	54,100	C.
February.....	780	390	547	30,400	B.
March.....	1,540	455	799	49,100	B.
April.....	2,230	1,160	1,640	97,600	B.
May.....	4,880	1,910	3,160	194,000	B.
June.....	9,760	2,530	4,940	294,000	B.
July.....	2,710	645	1,540	94,700	B.
August.....	605	118	249	15,300	B.
September.....	485	93	146	8,690	B.
The year.....	9,760	93	1,270	922,000	
1909-10.					
October.....	448	142	279	17,200	B.
November.....	19,500	255	4,790	285,000	B.
December.....	10,800	1,020	2,360	145,000	C.
January.....	2,420	492	1,000	61,500	B.
February.....	1,220	526	783	43,500	B.
March.....	11,100	2,670	4,750	292,000	B.
April.....	10,800	2,500	4,570	272,000	B.
May.....	9,500	3,740	5,110	314,000	B.
June.....	4,630	1,480	2,550	152,000	B.
July.....	1,480	268	961	59,100	B.
August.....	430	91	234	14,400	A.
September.....	145	72	102	6,070	A.
The year.....	19,500	72	2,300	1,660,000	
1910-11.					
October.....	1,480	145	693	42,600	B.
November.....	5,230	430	1,810	108,000	B.
December.....	1,480	560	927	57,000	B.
January.....	793	560	652	40,100	B.
February.....	526	430	458	25,400	B.
March.....	2,340	373	1,020	62,700	B.
April.....	3,020	995	1,710	102,000	B.
May.....	3,420	2,040	2,690	165,000	B.
June.....	6,620	1,760	3,580	213,000	C.
July.....	1,690	268	952	58,500	B.
August.....	492	145	370	22,800	B.
September.....	793	373	533	31,700	C.
The year.....	6,620	145	1,280	929,000	

Monthly discharge of Naches River near North Yakima—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1911-12.					
October.....	492	115	223	13,700	B.
November.....	2,840	319	826	49,200	B.
December.....	890	430	556	34,200	B.
January.....	2,210	342	965	59,300	C.
February.....	1,340	840	1,010	58,100	B.
March.....	1,470	545	724	44,500	B.
April.....	3,560	1,610	2,150	128,000	B.
May.....	7,430	2,210	4,470	275,000	B.
June.....	5,100	2,210	3,470	206,000	B.
July.....	1,610	228	834	51,300	B.
August.....	273	87	171	10,500	B.
September.....	510	81	342	20,400	B.
The year.....	7,430	81	1,310	950,000	

Yearly discharge of Naches River near North Yakima.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1899.....	7,070	225	445	Oct.....	1,970	1,420,000
1900.....	9,710	250	346	Aug.....	1,830	1,330,000
1901.....	9,070	300	322	Sept.....	2,150	1,560,000
1902.....	8,750	200	263	Sept.....	1,810	1,310,000
1903.....	11,300	200	296	Sept.....	2,260	1,640,000
1904.....	11,700	160	189	Sept.....	2,280	1,660,000
1905.....	3,370	100	181	Sept.....	961	696,000
1906.....	4,890	30	67.6	Aug.....	1,030	748,000
1907.....	21,900	45	184	Sept.....	2,210	1,600,000
1908.....	9,770	90	105	Oct.....	1,830	1,330,000
1909.....	9,760	93	146	Sept.....	1,270	922,000
1910.....	19,500	72	102	Sept.....	2,300	1,660,000
1911.....	6,620	145	370	Aug.....	1,280	929,000
1912.....	7,430	81	171	Aug.....	1,310	950,000
The period.....	21,900	30	67.6	Aug., 1906	1,750	1,270,000

BUMPING RIVER NEAR NILE (131).

Water-stage recorder half a mile below Bumping Lake dam, 11½ miles above American River, and 19 miles west of Nile, in Yakima County. Staff gages, read once or twice daily, in use prior to June 17, 1913.

Flow partly controlled by regulation in Bumping reservoir; monthly discharge without storage, beginning November, 1910, determined from record of stage at reservoir.

Drainage area, 68 square miles; measured on topographic maps.

Monthly discharge of Bumping River near Nile.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1906.							
June 13-30.....	417	266	318	4.68	3.13	11,400	A.
July.....	314	122	195	2.87	3.31	12,000	A.
The period.....						23,400	
1909.							
May.....	1,070	332	581	8.54	9.85	35,700	A.
June.....	1,980	578	1,090	16.0	17.85	64,900	A.
July.....	729	178	408	6.0	6.92	25,100	A.
August.....	171	68	102	1.50	1.73	6,270	A.
September.....	82	53	63.6	.935	1.04	3,780	B.
The period.....						136,000	
1909-10.							
October.....	75	49	62.2	.915	.105	3,820	B.
November.....	3,100	78	719	10.6	11.83	42,800	B.
December.....	1,460	178	390	5.74	6.62	24,000	B.
January.....	485	159	247	3.63	4.18	15,200	A.
February.....	254	a 0	154	2.26	2.35	8,550	A.
March.....	810	a 0	414	6.09	7.02	25,500	A.
April.....	1,550	269	579	8.51	9.50	34,500	A.
May.....	2,170	534	1,040	15.3	17.64	64,000	A.
June.....	1,460	300	675	9.93	11.08	40,200	A.
July.....	400	137	268	3.94	4.54	16,500	A.
August.....	137	50	88.0	1.29	1.49	5,410	A.
September.....	96	39	59.9	.881	.98	3,560	A.
The year.....	3,100	a 0	392	5.76	78.28	284,000	

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accu- racy of ob- served dis- charge.
	Maxi- mum.	Mini- mum.	Mean.	Ob- served.	Stored.	Without storage.	Mean.	Per square mile.		
1910-11.										
October.....	300	64	202	12,400	.....	12,400	202	2.96	3.41	A.
November.....	908	79	462	27,500	+3,000	30,500	513	7.54	8.41	A.
December.....	383	127	252	15,500	-3,800	11,700	190	2.79	3.22	A.
January.....	151	121	137	8,420	+18	8,440	137	2.01	2.32	A.
February.....	144	129	138	7,660	-10	7,650	138	2.03	2.11	A.
March.....	242	103	152	9,350	+196	9,550	155	2.28	2.63	A.
April.....	474	188	299	17,800	+1,260	19,100	321	4.72	5.27	A.
May.....	545	412	479	29,500	+1,940	31,400	511	7.51	8.66	A.
June.....	830	242	435	25,900	+24,100	50,000	840	12.40	13.83	A.
July.....	338	0	181	11,100	+3,780	14,900	242	3.56	4.10	A.
August.....	545	37	410	25,200	+19,100	6,100	99.2	1.46	1.68	A.
September.....	600	0	332	19,800	-10,300	9,500	160	2.35	2.62	D.
The year..	908	0	290	210,000	+1,080	211,000	292	4.29	58.26	
1911-12.										
October.....	339	0	34.5	2,120	+1,320	3,440	55.9	.822	.95	C.
November.....	273	123	219	13,000	-1,190	11,800	198	2.91	3.25	B.
December.....	273	123	182	11,200	-1,960	9,240	150	2.21	2.55	B.
January.....	273	105	189	11,600	+590	12,200	198	2.91	3.36	B.
February.....	243	189	216	12,400	-415	12,000	209	3.07	3.31	B.
March.....	177	105	126	7,750	-308	7,440	121	1.78	2.05	B.
April.....	267	143	215	12,800	+833	13,600	229	3.37	3.76	B.
May.....	771	154	534	32,800	+16,100	48,900	795	11.7	13.49	B.
June.....	1,290	165	657	39,100	+14,900	54,000	908	13.4	14.95	C.
July.....	660	143	368	22,600	-1,040	21,600	351	5.16	5.95	C.
August.....	322	177	239	14,700	-7,620	7,080	115	1.69	1.95	B.
September.....	501	258	402	23,900	-16,600	7,300	123	1.81	2.02	B.
The year....	1,290	0	281	204,000	+4,610	209,000	287	4.22	57.59	

a The river was dammed by a snowslide from Feb. 27 to Mar. 1.

Monthly discharge of Bumping River near Nile—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1912-13.										
October.....	305	23	189	11,600	-5,690	5,910	96	1.41	1.63	B.
November.....	422	0	200	11,900	+120	12,000	202	2.97	3.31	B.
December.....	210	112	169	10,400	-1,070	9,330	152	2.24	2.58	B.
January.....	202	143	176	10,800	+217	11,000	179	2.63	3.03	B.
February.....	177	143	158	8,780	-70	8,710	157	2.31	2.4	B.
March.....	165	123	144	8,850	-87	8,760	142	2.09	2.41	B.
April.....	339	123	207	12,300	+1,260	13,600	229	3.37	3.76	B.
May.....	735	305	496	30,500	+10,900	41,400	673	9.9	11.41	B.
June.....	1,190	141	771	45,900	+20,400	66,300	1,110	16.3	18.19	B.
July.....	980	280	624	38,400	-910	37,500	610	8.97	10.34	A.
August.....	708	228	491	30,200	-19,900	10,300	168	2.47	2.85	A.
September.....	556	169	312	18,600	-10,700	7,900	132	1.94	2.16	A.
The year....	1,190	0	329	238,000	-5,530	233,000	322	4.74	64.07	
1913-14.										
October.....	191	126	163	10,000	-265	9,740	158	2.32	2.68	A.
November.....	245	159	201	12,000	+575	12,600	212	3.12	3.48	A.
December.....	245	118	161	9,900	-870	9,030	147	2.16	2.49	A.
January.....	787	97	426	26,200	+545	26,700	434	6.38	7.36	A.
February.....	180	0	119	6,610	-613	6,000	108	1.59	1.66	B.
March.....	298	21	208	12,800	+168	13,000	211	3.10	3.57	A.
April.....	631	197	440	26,200	+1,890	28,100	472	6.94	7.74	A.
May.....	656	24	263	16,200	+29,900	46,100	750	11.0	12.68	A.
June.....	1,010	376	554	33,000	-494	32,500	546	8.03	8.96	A.
July.....	440	126	281	17,300	-3,380	13,900	226	3.32	3.83	A.
August.....	440	336	394	24,200	-16,400	7,800	127	1.87	2.16	A.
September.....	581	154	325	19,300	-11,900	7,400	124	1.82	2.03	A.
The year....	1,010	0	295	214,000	-844	213,000	294	4.32	58.64	
1914-15.										
October.....	244	2	111	6,840	+1,860	8,700	141	2.07	2.39	B.
November.....	615	5	347	20,700	+9,430	30,100	506	7.44	8.30	A.
December.....	542	124	355	21,800	-11,500	10,300	168	2.47	2.85	A.
January.....	117	63	87.7	5,390	+1,230	6,620	108	1.59	1.83	B.
February.....	79	64	69.8	3,870	-32	3,840	69.2	1.02	1.06	B.
March.....	452	4	120	7,400	+2,640	10,000	163	2.40	2.77	B.
April.....	719	15	399	23,700	+9,510	33,200	558	8.21	9.16	A.
May.....	314	14	37.9	2,330	+18,600	20,900	340	5.00	5.76	B.
June.....	314	19	122	7,230	+3,560	10,800	182	2.68	2.99	B.
July.....	590	28	345	21,200	-13,400	7,800	127	1.87	2.16	A.
August.....	890	244	420	25,800	-19,700	6,100	99.3	1.46	1.68	A.
September.....	197	33	63.1	3,750	-1,740	2,010	33.8	.50	.56	B.
The year....	890	2	207	150,000	+458	150,000	207	3.04	41.51	
1915-16.										
October.....	145	33	59.4	3,650	+902	4,550	74.1	1.09	1.26	A.
November.....	244	111	185	11,000	+195	11,200	188	2.76	3.08	A.
December.....	197	82	143	8,770	+972	9,740	158	2.32	2.68	A.
January.....	152	50.7	108	6,610	-1,070	5,540	90.1	1.32	1.52	A.
February.....	271	6.4	167	9,570	+700	10,300	179	2.63	2.84	A.
March.....	561	13.6	286	17,600	+1,990	19,600	319	4.69	5.41	A.
April.....	435	300	371	22,100	-248	21,900	368	5.41	6.04	A.
May.....	831	452	656	40,300	+4,810	45,100	733	10.78	12.43	A.
June.....	1,740	427	907	53,900	+25,500	79,400	1,330	19.56	21.82	B.
July.....	1,800	717	1,220	75,300	-532	74,800	1,220	17.94	20.68	B.
August.....	840	324	559	34,400	-6,110	28,300	460	6.76	7.79	A.
September.....	597	167	478	28,400	-17,600	10,800	182	2.68	2.99	A.
The year....	1,800	6.4	429	312,000	+9,510	321,000	442	6.50	88.54	
1916-17.										
October.....	167	124	156	9,570	-4,170	5,400	87.8	1.29	1.49	A.
November.....	233	2.0	127	7,570	-1,720	5,850	98.3	1.45	1.62	A.
December.....	204	1.5	56.4	3,470	+414	3,880	63.1	.928	1.07	B.
January.....	263	.9	113	6,960	-2,780	4,180	68.0	1.00	1.15	A.
February.....	198	1.3	68.3	3,790	-227	3,560	64.1	.943	.98	B.
March.....	124	32.2	51.7	3,180	+931	4,110	66.8	.982	1.13	B.
April.....	61.4	38.8	50.7	3,020	+3,000	6,020	101	1.42	1.66	B.
May.....	399	59.8	238	14,600	+19,800	34,400	559	8.22	9.48	A.
June.....	1,570	249	1,010	59,800	+9,260	69,100	1,160	17.1	19.08	A.
July.....	1,410	322	945	58,100	-1,370	56,700	922	13.6	15.68	A.
August.....	577	251	496	30,500	-17,900	12,600	205	3.01	3.47	A.
September.....	417	132	311	18,500	-13,600	4,900	82.3	1.21	1.35	A.
The year....	1,570	.9	303	219,000	-8,400	211,000	291	4.28	58.16	

Monthly discharge of Bumping River near Nile—Continued.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Discharge in second-feet, without storage.		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1917-18.										
October.....	121	45	64.4	3,960	-790	3,170	51.6	0.759	0.83	B.
November.....	47	1.6	4.23	252	+3,650	3,900	65.5	.963	1.07	C.
December.....	4,520	1.7	446	27,400	+31,400	58,800	956	14.1	16.26	A.
January.....	1,920	327	690	42,400	-4,530	37,900	616	9.06	10.44	A.
February.....	578	306	381	21,200	-10,900	10,300	185	2.72	2.83	A.
March.....	461	8.2	263	16,200	-8,410	7,790	127	1.87	2.16	A.
April.....	24	11	17.2	1,020	+17,000	18,000	302	4.44	4.95	C.
May.....	692	24	413	25,400	+7,470	32,900	535	7.87	9.07	A.
June.....	1,400	413	850	50,600	-680	49,900	839	12.3	13.72	A.
July.....	394	204	273	16,800	-4,860	11,900	194	2.85	3.29	A.
August.....	584	276	402	24,700	-19,200	5,500	89.4	1.31	1.51	A.
September.....	335	55	221	13,200	-10,600	2,600	43.7	.643	.72	A.
The year.....	4,520	1.6	336	243,000	-660	243,000	335	4.93	66.90	
1918-19.										
October.....	67	3	48.3	2,970	+3,310	6,280	102	1.50	1.73	B.
November.....	188	2	27.6	1,640	+5,120	6,760	114	1.68	1.87	B.
December.....	299	67	118	7,270	+8,380	15,600	254	3.74	4.31	B.
January.....	394	263	315	19,400	+11,200	30,600	498	7.32	8.44	A.
February.....	380	314	347	19,300	-9,520	9,780	176	2.59	2.70	A.
March.....	327	243	281	17,300	-11,000	6,300	102	1.50	1.73	A.
April.....	253	151	225	13,400	+4,770	18,200	306	4.50	5.02	A.
May.....	1,200	209	359	22,100	+23,800	45,900	746	11.0	12.68	A.
June.....	1,040	560	797	47,400	-760	46,600	783	11.5	12.83	A.
July.....	698	160	405	24,900	-810	24,100	392	5.76	6.64	A.
August.....	445	142	366	22,500	-15,300	7,200	117	1.72	1.98	A.
September.....	403	253	352	20,900	-16,100	4,800	80.7	1.19	1.33	A.
The year.....	1,200	2	303	219,000	+3,090	222,000	307	4.51	61.26	

NOTE.—Maximum discharge during period of record, 5,180 second-feet at 5 p. m. Dec. 29, 1917; minimum discharge practically zero, when reservoir gates are closed.

Yearly discharge of Bumping River near Nile.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
		Mean.	Month.					
1910.....	3,100	0	59.9	Sept.....	392	5.76	78.28	284,000
1911.....	908	0	99.2	Aug.....	292	4.29	58.26	211,000
1912.....	1,290	0	55.9	Oct.....	287	4.22	57.59	209,000
1913.....	1,190	0	96	Oct.....	322	4.74	64.07	233,000
1914.....	1,010	0	108	Feb.....	294	4.32	58.64	213,000
1915.....	890	2	33.8	Sept.....	207	3.04	41.51	150,000
1916.....	1,800	6.4	74.1	Oct.....	442	6.50	88.54	321,000
1917.....	1,570	.9	63.1	Dec.....	291	4.28	58.16	211,000
1918.....	4,520	1.6	43.7	Sept.....	335	4.93	66.90	243,000
1919.....	1,200	2	80.7	Sept.....	307	4.51	61.26	222,000
The period...	4,520	0	33.8	Sept., 1915	317	4.66	63.32	236,000

AMERICAN RIVER NEAR NILE (132).

Staff gages at highway bridge, three-fourths mile above mouth of river and 17 miles northwest of Nile, in Yakima County.

Drainage area, 80 square miles (revised); measured on topographic maps.

Monthly discharge of American River near Nile.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1909.							
April 25-30.....	444	334	378	4.72	1.05	4,500	A.
May.....	956	377	603	7.54	8.69	37,100	A.
June.....	1,580	520	980	12.2	13.61	58,300	A.
July.....	777	233	485	6.06	6.99	29,800	A.
August.....	215	74	117	1.46	1.68	7,190	A.
September.....	66	52	56.3	.704	.79	3,350	B.
October.....	66	45	53.2	.665	.77	3,270	B.
The period (190 days).....						144,000	
1910.							
May 26-31.....	955	736	826	10.3	2.30	9,830	B.
June.....	969	344	541	6.76	7.54	32,200	B.
July.....	446	130	272	3.40	3.92	16,700	B.
August.....	130	75	99.4	1.24	1.43	6,110	B.
September.....	75	56	62.5	.781	.87	3,720	B.
October.....	374	60	170	2.12	2.44	10,500	B.
The period (159 days).....						79,100	
1910-11.							
November 1-15.....	1,180	82	330	4.12	2.30	9,820	B.
May 18-31.....	800	432	518	6.48	3.37	14,400	B.
June.....	1,400	432	792	9.90	11.04	47,100	B.
July.....	540	118	280	3.50	4.04	17,200	B.
August.....	111	57	80.2	1.00	1.15	4,930	B.
September.....	91	57	84.6	1.06	1.18	5,030	B.
The period (151 days).....						98,500	
1913.							
July.....	1,020	446	781	9.76	11.25	48,000	C.
August.....	500	205	328	4.10	4.73	20,100	C.
September.....	878	177	267	3.34	3.73	15,900	C.
The period.....						84,000	
1914.							
June 26-30.....	431	355	393	4.91	.91	3,900	B.
July.....	462	95	236	2.95	3.40	14,500	B.
August.....	95	48	65	.812	.94	4,010	B.
September 1-5.....	48	48	48	.600	.11	476	B.
The period.....						22,900	
1915.							
July.....	177	76	119	1.49	1.72	7,300	C.
August.....	77	49	62.9	.786	.91	3,860	D.
September 1-11.....	49	47	47.6	.595	.24	1,040	C.
The period.....						12,200	

NORTH FORK OF TIETON RIVER BELOW CLEAR CREEK NEAR NACHES (133).

Staff gage below Clear Creek reservoir dam, a quarter of a mile below Clear Creek, 7 miles above South Fork, and 30 miles southwest of Naches, in Yakima County.

Beginning July, 1915, flow slightly controlled, to avoid diurnal fluctuation, by regulation in Clear Creek reservoir.

Drainage area, 61 square miles: measured on topographic maps.

Monthly discharge of North Fork of Tieton River below Clear Creek near Naches.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1914.							
May 5-31.....	720	330	480	7.87	7.90	25,700	A.
June.....	750	254	410	6.72	7.50	24,400	A.
July.....	485	210	308	5.05	5.82	19,000	A.
August.....	263	178	221	3.62	4.17	13,600	A.
September.....	245	108	164	2.69	3.00	9,780	A.
The period.....						92,500	

Month.	Observed discharge (second-feet).			Run-off in acre-feet.			Discharge without storage. (second-feet).		Run-off in inches.	Accuracy of observed discharge.
	Maximum.	Minimum.	Mean.	Observed.	Stored.	Without storage.	Mean.	Per square mile.		
1914-15.										
October.....	263	123	178	10,900	0	10,900	178	2.92	3.37	A.
July.....	291	126	210	12,900	-113	12,800	208	3.41	3.93	B.
August.....	264	157	206	12,700	-82	12,600	205	3.36	3.87	B.
September 1-19.	203	157	170	6,380	-1,600	4,780	127	2.08	1.47	B.

TIETON RIVER AT McALLISTER MEADOWS NEAR NACHES (134).

Staff gage half a mile above Wildcat Creek, 1½ miles below North and South forks of Tieton River, 7½ miles above headworks of Tieton canal, and 21 miles southwest of Naches, in Yakima County.

Drainage area, 187 square miles; measured on topographic maps.

Monthly discharge of Tieton River at McAllister Meadows near Naches.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1908.							
September.....	362	205	287	1.53	1.71	17,100	B.
The month.....						17,100	
1908-9.							
October.....	446	198	239	1.28	1.48	14,700	B.
November.....			349	1.87	2.09	20,800	B.
December.....			190	1.02	1.18	11,700	B.
January.....			300	1.60	1.84	18,400	B.
February.....			230	1.23	1.23	12,800	B.
March.....			350	1.87	2.16	21,500	B.
April.....	680	375	471	2.52	2.81	28,000	B.
May.....	1,240	515	788	4.21	4.85	48,500	B.
June.....	1,930	750	1,170	6.26	6.98	69,600	B.
July.....	860	402	570	3.05	3.52	35,000	A.
August.....	402	197	304	1.63	1.88	18,700	A.
September.....	305	162	229	1.22	1.36	13,600	A.
The year.....			433	2.32	31.43	313,000	

Monthly discharge of Tieton River at McAllister Meadows near Naches—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1909-10.							
October.....	302	138	184	0.984	1.13	11,300	A.
November.....	4,200	174	1,190	6.36	7.10	70,800	B.
December.....	1,820	238	611	3.27	3.77	37,500	A.
January.....	1,140	127	326	1.74	2.01	20,000	B.
February.....	430	210	281	1.50	1.56	15,600	C.
March.....	2,260	500	1,050	5.61	6.46	64,600	C.
April.....	2,190	614	1,070	5.72	6.38	63,700	A.
May.....	2,370	917	1,340	7.17	8.27	82,400	A.
June.....	1,610	620	904	4.83	5.39	53,800	A.
July.....	748	360	523	2.80	3.23	32,200	A.
August.....	400	196	292	1.56	1.80	18,000	B.
September.....	282	206	235	1.26	1.41	14,000	B.
The year.....	4,200	127	668	3.57	48.51	484,000	
1910-11.							
October.....	1,210	229	391	2.09	2.41	24,000	A.
November.....	2,410	205	576	3.08	3.44	34,300	A.
December.....	390	229	282	1.51	1.74	17,300	B.
January.....	300	160	227	1.21	1.40	14,000	B.
February.....			180	.963	1.00	10,000	C.
March.....	520	162	258	1.38	1.59	15,900	B.
April.....	760	308	461	2.47	2.76	27,400	B.
May.....	1,220	560	708	3.79	4.37	43,500	B.
June.....	2,210	650	1,180	6.31	7.04	70,200	B.
July.....	845	400	591	3.16	3.64	36,300	B.
August.....	405	250	305	1.63	1.88	18,800	B.
September.....	878	190	306	1.64	1.83	18,200	B.
The year.....	2,410		456	2.44	33.10	330,000	
1911-12.							
October.....	190	157	175	.936	1.08	10,800	B.
November.....	878	157	336	1.80	2.01	20,000	B.
December.....	282	176	211	1.13	1.30	13,000	B.
January.....	1,100	177	399	2.13	2.46	24,500	B.
February.....	455	263	355	1.90	2.05	20,400	B.
March.....	304	192	234	1.25	1.44	14,400	B.
April.....	787	362	508	2.72	3.04	30,200	B.
May.....	1,770	560	1,130	6.04	6.96	69,500	B.
June.....	1,570	840	1,220	6.52	7.27	72,600	B.
July.....	740	430	579	3.10	3.57	35,600	B.
August.....	662	244	367	1.96	2.26	22,600	B.
September.....	541	200	268	1.43	1.60	15,900	B.
The year.....	1,770	157	481	2.57	35.04	350,000	
1912.							
October.....	208	174	185	.989	1.14	11,400	B.
November.....	662	174	264	1.41	1.57	15,700	B.
December.....	244	172	189	1.01	1.16	11,600	B.
The period.....						38,700	
1914.							
June 17-30.....	1,210	620	834	4.46	2.32	23,100	A.
July.....	915	400	588	3.15	3.63	36,200	B.
August.....	420	259	325	1.74	2.01	20,000	B.
September.....	356	197	246	1.32	1.47	14,600	B.
The period.....						93,900	

NOTE.—Maximum discharge during period of record, 4,200 second-feet at 3.30 p. m. Nov. 23, 1909; minimum discharge, 127 second-feet, Jan. 12, 1910. Discharge estimated by comparison with records at other stations, November, 1908, to March, 1909, February and March, 1910, and February, 1911. Except for short intervals, results are based on gage readings taken from 2 to 7 days apart; discharge for periods during which gage heights are lacking estimated by comparison with records for Tieton River at headworks of Tieton canal.

TIETON RIVER AT HEADWORKS OF TIETON CANAL NEAR NACHES (135).

Water-stage recorder (PL. VII, B) about 1,000 feet below intake of Tieton canal, 15 miles above mouth of river, and 16 miles southwest of Naches, in Yakima County. Staff gages, read once or twice daily, used prior to July 28, 1909.

Tieton canal has diverted water above the gaging station since 1910; discharge in canal added to obtain natural discharge. Flow slightly controlled, to avoid diurnal fluctuation, by regulation in Clear Creek reservoir since 1915.

Drainage area, 240 square miles (revised); measured on topographic maps.

Monthly discharge of Tieton River at headworks of Tieton canal near Naches.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907.							
July.....	955	492	652	2.72	3.14	40,100	A.
August.....	562	268	366	1.52	1.75	22,500	A.
September.....	370	210	289	1.20	1.34	17,200	A.
The period.....						79,800	
1907-8.							
October.....	281	203	243	1.01	1.16	14,900	A.
November.....	610	146	223	.929	1.04	13,300	B.
December.....	910	180	334	1.39	1.60	20,500	A.
January.....	634	152	259	1.08	1.24	15,900	A.
February.....	292	162	228	.950	1.02	13,100	A.
March.....	3,170	203	764	3.18	3.67	47,000	A.
April.....	2,460	510	965	4.02	4.48	57,400	A.
May.....	1,310	845	1,040	4.33	4.99	64,000	A.
June.....	2,640	910	1,500	6.25	6.97	89,300	A.
July.....	1,920	600	1,250	5.21	6.01	76,900	B.
August.....	680	334	496	2.07	2.39	30,500	A.
September.....	386	224	320	1.33	1.48	19,000	A.
The year.....	3,170	146	636	2.65	36.05	462,000	
1908-9.							
October.....	510	227	279	1.16	1.34	17,200	A.
November.....	1,120	206	372	1.55	1.73	22,100	A.
December.....	295	150	224	.933	1.08	13,800	B.
January.....	850	230	339	1.41	1.63	20,800	B.
February.....	372	230	265	1.10	1.14	14,700	B.
March.....	652	224	380	1.58	1.82	23,400	B.
April.....	910	470	595	2.48	2.77	35,400	A.
May.....	1,400	735	929	3.87	4.46	57,100	A.
June.....	2,450	840	1,360	5.67	6.33	80,900	A.
July.....	902	515	685	2.85	3.29	42,100	A.
August.....	510	273	358	1.49	1.72	22,000	B.
September.....	382	204	283	1.18	1.32	16,800	B.
The year.....	2,450	150	506	2.11	28.63	366,000	

Month.	Observed discharge of river in second-feet.			Run-off in acre-feet.			Natural discharge in second-feet.		Run-off in inches.	Accu- racy.
	Maximum.	Minimum.	Mean.	River.	Tieton canal.	Natural.	Mean.	Per square mile.		
1909-10.										
October.....	305	152	204	12,500	.....	12,500	204	0.850	0.98	
November.....	4,970	191	1,320	78,600	.....	78,600	1,320	5.50	6.14	B.
December.....	1,780	404	670	41,200	.....	41,200	670	2.79	3.22	B.
January.....	1,070	200	361	22,200	.....	22,200	361	1.50	1.73	C.
February.....	458	251	325	18,000	.....	18,000	325	1.35	1.41	A.
March.....	2,710	789	1,350	83,000	.....	83,000	1,350	5.62	6.48	B.
April.....	2,280	772	1,190	70,800	.....	70,800	1,190	4.96	5.53	A.
May.....	2,350	1,010	1,380	84,800	1,700	86,500	1,410	5.88	6.78	A.
June.....	1,550	669	919	54,700	2,570	57,300	963	4.01	4.47	A.
July.....	723	352	567	34,900	2,540	37,400	608	2.53	2.92	A.
August.....	397	258	330	20,300	1,090	21,400	348	1.45	1.67	A.
September.....	319	213	256	15,200	.....	15,200	256	1.07	1.19	A.
The year.....	4,970	152	741	536,000	7,900	544,000	752	3.13	42.52	

Monthly discharge of Tieton River at headworks of Tieton canal near Naches—Contd.

Month.	Observed discharge of river in second-feet.			Run-off in acre-feet.			Natural discharge in second-feet.		Run-off in inches.	Accuracy.
	Maximum.	Minimum.	Mean.	River.	Tieton canal.	Natural.	Mean.	Per square mile.		
1910-11.										
October.....	828	246	400	24,600	.....	24,600	400	1.67	1.92	A.
November.....	1,790	225	583	34,700	.....	34,700	583	2.43	2.71	A.
December.....	467	265	331	20,400	.....	20,400	331	1.38	1.59	A.
January.....	338	180	251	15,400	.....	15,400	251	1.05	1.21	A.
February.....	227	175	198	11,000	.....	11,000	198	.825	.86	A.
March.....	650	177	341	21,000	.....	21,000	341	1.42	1.64	A.
April.....	862	388	548	32,600	1,360	34,000	571	2.38	2.66	A.
May.....	1,240	585	745	45,800	2,770	48,600	790	3.29	3.79	A.
June.....	2,160	645	1,190	70,800	6,070	76,900	1,290	5.38	6.00	A.
July.....	814	300	512	31,500	7,690	39,200	638	2.66	3.07	A.
August.....	304	208	252	15,500	6,270	21,800	355	1.48	1.71	A.
September.....	570	130	276	16,400	2,960	19,400	326	1.36	1.52	A.
The year....	2,160	130	469	340,000	27,100	367,000	507	2.11	28.68	
1911-12.										
October.....	224	175	201	12,400	117	12,500	203	.846	.98	A.
November.....	880	175	328	19,500	1,270	20,800	350	1.46	1.63	A.
December.....	300	186	239	14,700	563	15,300	249	1.04	1.20	A.
January.....	998	185	439	27,000	.....	27,000	439	1.83	2.11	B.
February.....	616	331	464	26,700	.....	26,700	464	1.93	2.08	A.
March.....	491	243	314	19,300	.....	19,300	314	1.31	1.51	A.
April.....	970	563	663	39,500	628	40,100	674	2.81	3.14	A.
May.....	1,760	654	1,180	72,600	8,670	81,300	1,320	5.50	6.34	B.
June.....	1,760	429	1,060	63,100	11,600	74,700	1,260	5.25	5.86	B.
July.....	662	188	424	26,100	10,200	36,300	590	2.46	2.84	A.
August.....	439	109	193	11,900	11,300	23,200	377	1.57	1.81	A.
September.....	336	119	189	11,200	5,220	16,400	276	1.15	1.28	A.
The year....	1,760	109	474	344,000	49,600	394,000	542	2.26	30.78	
1912-13.										
October.....	255	168	190	11,700	.....	11,700	190	.792	.91	A.
November.....	609	152	278	16,500	.....	16,500	278	1.16	1.29	B.
December.....	270	152	190	11,700	.....	11,700	190	.79	.91	B.
January.....	304	215	252	15,500	.....	15,500	252	1.05	1.21	C.
February.....	458	171	296	16,400	.....	16,400	296	1.23	1.28	C.
March.....	365	266	300	18,400	.....	18,400	300	1.25	1.44	B.
April.....	1,050	304	677	40,100	1,240	41,500	698	2.98	3.25	B.
May.....	2,190	563	1,160	71,400	10,900	82,400	1,340	5.56	6.43	B.
June.....	2,670	1,170	1,730	103,000	10,900	114,000	1,910	7.91	8.88	A.
July.....	1,170	424	788	48,500	13,900	62,100	1,010	4.21	4.85	A.
August.....	448	74	263	16,100	14,600	30,700	500	2.08	2.40	A.
September.....	1,020	90	279	16,600	8,210	24,800	417	1.74	1.94	B.
The year....	2,670	74	533	386,000	59,800	446,000	616	2.57	34.79	
1913-14.										
October.....	458	117	254	15,600	1,360	17,000	276	1.15	1.33	A.
November.....	284	185	231	13,800	969	14,800	249	1.04	1.16	A.
December.....	266	171	215	13,200	.....	13,200	215	.896	1.03	B.
January.....	1,700	185	522	32,100	.....	32,100	522	2.18	2.51	A.
February.....	303	220	240	13,300	.....	13,300	240	1.00	1.04	A.
March.....	815	340	550	33,800	.....	33,800	550	2.29	2.64	A.
April.....	1,430	360	873	51,900	2,780	54,700	919	3.83	4.27	A.
May.....	1,520	630	1,000	61,700	12,600	74,300	1,210	5.04	5.81	A.
June.....	1,520	400	745	44,300	11,100	55,400	931	3.88	4.33	A.
July.....	660	129	347	21,300	16,500	37,800	615	2.56	2.95	A.
August.....	176	47	95	5,830	15,600	21,400	348	1.45	1.67	A.
September.....	320	25	136	8,100	9,080	17,200	289	1.20	1.34	A.
The year....	1,700	25	435	315,000	70,000	385,000	532	2.22	30.08	
1914-15.										
October.....	420	235	304	18,700	.....	18,700	304	1.27	1.46	B.
November.....	1,090	266	493	29,300	2,030	31,300	527	2.20	2.46	B.
December.....	333	154	220	13,500	.....	13,500	220	.917	1.06	C.
January.....	198	141	171	10,500	.....	10,500	171	.713	.82	C.
February.....	178	154	166	9,220	.....	9,220	166	.692	.72	B.
March.....	538	173	319	19,600	.....	19,600	319	1.33	1.53	A.
April.....	1,440	360	712	42,400	5,370	47,800	802	3.34	3.73	B.
May.....	810	294	441	27,100	12,200	39,300	640	2.67	3.08	B.
June.....	467	68	242	14,400	14,500	28,900	486	2.02	2.25	A.
July.....	458	25	123	7,560	15,800	23,400	380	1.58	1.82	A.
August.....	287	36	103	6,350	13,600	19,900	324	1.35	1.76	B.
September.....	277	45	149	8,850	4,990	13,800	233	.971	1.08	B.
The year....	1,440	25	287	207,000	68,500	276,000	382	1.59	21.57	

Monthly discharge of Tieton River at headworks of Tieton canal near Naches—Contd.

Month.	Observed discharge of river in second-feet.			Run-off in acre-feet.			Natural discharge in second-feet.		Run-off in inches.	Accuracy.
	Maximum.	Minimum.	Mean.	River.	Tieton canal.	Natural.	Mean.	Per square mile.		
1915-16.										
October.....	315	138	200	12,300	.....	12,300	200	0.833	0.96	A.
November.....	368	76	172	10,300	2,090	12,400	207	.862	.96	B.
December.....	774	123	277	17,000	310	17,300	282	1.18	1.36	B.
January.....	.....	.....	160	9,800	.....	9,800	160	.667	.77	D.
February.....	.....	.....	450	25,900	.....	25,900	450	1.88	2.03	D.
March.....	1,520	292	882	54,200	.....	54,200	882	3.68	4.24	B.
April.....	1,430	780	1,140	67,500	2,330	69,800	1,140	4.75	5.30	A.
May.....	2,420	744	1,270	78,300	13,900	92,200	1,500	6.25	7.21	A.
June.....	3,430	1,100	1,800	107,000	15,800	123,000	2,060	8.58	9.57	A.
July.....	2,550	670	1,410	86,500	15,300	102,000	1,660	6.92	7.98	A.
August.....	758	266	464	28,500	17,500	46,000	748	3.12	3.60	A.
September.....	390	69	184	11,000	12,500	23,500	395	1.65	1.84	A.
The year.....	3,430	69	700	508,000	79,700	588,000	810	3.38	45.82	
1916-17.										
October.....	289	182	232	14,300	.....	14,300	233	.971	1.12	B.
April 3-30.....	625	166	333	18,500	2,980	21,500	387	1.61	1.68	B.
May.....	1,880	443	1,020	62,500	14,800	77,300	1,260	5.25	6.05	B.
June.....	2,180	990	1,470	87,500	16,200	104,000	1,750	7.29	8.13	B.
July.....	1,780	438	1,080	66,200	17,700	83,900	1,360	5.67	6.54	B.
August.....	381	81	218	13,400	17,400	30,800	501	2.09	2.41	B.
September.....	144	50	95	5,660	14,200	19,900	334	1.39	1.55	B.
1918.										
April.....	785	465	601	35,800	3,280	39,100	657	2.74	3.06	A.
May.....	984	294	566	34,800	18,300	53,100	864	3.60	4.15	A.
June.....	1,570	470	906	53,900	18,100	72,000	1,210	5.04	5.62	A.
July.....	481	101	297	18,300	18,800	37,100	603	2.51	2.89	A.
August.....	237	12	57.9	3,560	18,300	21,900	356	1.48	1.71	A.
September.....	343	12	87.3	5,190	14,000	19,200	323	1.35	1.51	A.
The period.....	.....	.....	.....	152,000	90,800	242,000	.....	.....	.....
1919.										
April.....	780	507	629	37,400	6,160	43,600	733	3.05	3.40	A.
May.....	1,660	396	751	46,100	19,000	65,100	1,060	4.42	5.10	A.
June.....	887	458	648	38,600	18,500	57,100	959	4.00	4.46	A.
July.....	568	97	341	20,900	19,500	40,400	657	2.74	3.16	A.
August.....	101	31	54.3	3,340	19,400	22,700	369	1.54	1.78	A.
September.....	199	23	55.9	3,330	14,900	18,200	306	1.28	1.43	A.
The period.....	.....	.....	.....	150,000	97,500	247,000	.....	.....	.....

NOTE.—Maximum discharge during period of record, 5,400 second-feet at 4 a. m. Nov. 24, 1909; minimum discharge, 8 second-feet at 10 a. m. Aug. 28, 1918. Monthly discharge for January and February, 1916, estimated by comparison with record of Bumping River at outlet of Bumping Lake and of Cowlitz River at Lewis.

Yearly discharge of Tieton River at headworks of Tieton canal near Naches.

Year ending September 30.	Discharge in second-feet.						Annual run-off.		
	Maximum day.	Minimum.				Annual mean.	Annual mean per square mile.	Inches.	Acre-feet
		Day.	Calendar month.		Mean.				
			Month.	Month.					
1908.....	3,170	146	223	Nov.....	636	2.65	36.05	462,000	
1909.....	2,450	150	224	Dec.....	506	2.11	28.63	366,000	
1910.....	4,970	152	204	Oct.....	752	3.13	42.52	544,000	
1911.....	2,160	130	198	Feb.....	507	2.11	28.68	367,000	
1912.....	1,760	109	203	Oct.....	542	2.26	30.78	394,000	
1913.....	2,670	74	190	Oct. and Dec.	616	2.57	34.79	446,000	
1914.....	1,700	25	215	Dec.....	532	2.22	30.08	385,000	
1915.....	1,440	25	166	Feb.....	382	1.59	21.57	276,000	
1916.....	3,430	69	160	Jan.....	810	3.38	45.82	588,000	
The period.....	4,970	25	160	Jan., 1916.	587	2.45	33.21	425,000	

TIETON RIVER ABOVE AND BELOW OAK CREEK NEAR NACHES (136).

Staff or chain gages 2 miles above mouth of Tieton River and 5 miles west of Naches, in Yakima County; above Oak Creek, March, 1906, to September, 1907; below Oak Creek for remainder of period of record.

Tieton canal has diverted water above the gaging station since irrigation season of 1910; discharge of canal added to observed flow to obtain natural discharge.

Drainage area above Oak Creek, 264 square miles; below Oak Creek, 297 square miles (revised); measured on topographic maps.

Monthly discharge of Tieton River above and below Oak Creek near Naches.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1902.							
July.....	985	568	783	2.64	3.04	48,100	B.
August.....	671	342	470	1.58	1.82	28,900	B.
September.....	406	260	328	1.10	1.23	19,500	B.
The period.....						96,500	
1902-3.							
October.....	312	240	261	.879	1.01	16,000	B.
November.....	462	240	323	1.09	1.22	19,200	B.
December.....	725	238	386	1.30	1.50	23,700	B.
January.....	2,890	462	857	2.89	3.33	52,700	B.
February.....	490	350	398	1.34	1.40	22,100	B.
March.....	1,070	330	486	1.64	1.89	29,900	B.
April.....	1,100	587	768	2.59	2.89	45,700	B.
May.....	2,070	919	1,300	4.38	5.05	79,900	B.
June.....	4,850	1,180	2,200	7.41	8.27	131,000	B.
July.....	1,440	528	818	2.75	3.17	50,300	B.
August.....	548	376	452	1.52	1.75	27,800	A.
September.....	482	297	362	1.22	1.36	21,500	A.
The year.....	4,850	238	718	2.42	32.84	520,000	
1903-4.							
October.....	912	281	422	1.42	1.64	25,900	A.
November.....	1,060	330	552	1.86	2.08	32,800	B.
December.....	1,240	319	510	1.72	1.98	31,400	B.
January.....	500	308	360	1.21	1.40	22,100	B.
February.....	330	258	293	.987	1.06	16,800	B.
March.....	447	277	337	1.13	1.30	20,700	B.
April.....	3,140	330	1,580	5.32	5.94	94,100	B.
May.....	2,880	1,030	1,610	5.42	6.25	99,200	B.
June.....	2,200	1,000	1,460	4.92	5.49	86,600	B.
July.....	1,670	540	961	3.24	3.74	59,100	A.
August.....	602	353	458	1.54	1.78	28,200	A.
September.....	388	287	329	1.11	1.24	19,600	A.
The year.....	3,140	258	739	2.49	33.90	536,000	
1904-5.							
October.....	500	233	278	.936	1.08	17,100	A.
November.....	1,210	220	413	1.39	1.55	24,600	B.
December.....	540	287	357	1.20	1.38	22,000	A.
January.....	381	233	293	.987	1.14	18,000	A.
February.....	493	208	283	.953	.99	15,700	B.
March.....	1,000	447	747	2.52	2.90	45,900	B.
April.....	1,050	430	564	1.90	2.12	33,600	B.
May.....	988	493	617	2.08	2.40	37,900	B.
June.....	1,670	602	895	3.01	3.36	53,300	B.
July.....	695	415	524	1.76	2.03	32,200	A.
August.....	437	263	369	1.24	1.43	22,700	A.
September.....	358	249	305	1.03	1.15	18,100	A.
The year.....	1,670	208	471	1.59	21.53	341,000	

Monthly discharge of Tieton River above and below Oak Creek near Naches—Contd.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1905-6.							
October.....	775	246	359	1.21	1.40	22,100	A.
November.....	267	200	236	.795	.89	14,000	B.
December.....	233	196	220	.741	.85	13,500	B.
January.....	335	207	232	.781	.90	14,300	B.
February.....	885	258	367	1.24	1.29	20,400	B.
March.....	940	285	381	1.44	1.66	23,400	B.
April.....	1,370	696	1,000	3.79	4.23	59,500	B.
May.....	1,370	593	956	3.62	4.17	58,800	B.
June.....	961	452	616	2.33	2.60	36,700	A.
July.....	802	398	560	2.12	2.44	34,400	A.
August.....	420	228	350	1.33	1.53	21,500	A.
September.....	389	168	250	.947	1.06	14,900	A.
The year.....	1,370	168	461	1.70	23.02	334,000	
1906-7.							
October.....	975	188	289	1.09	1.26	17,800	A.
November.....	14,100	212	2,220	8.41	9.38	132,000	B.
December.....	2,280	536	921	3.49	4.02	56,600	B.
January.....	596	315	408	1.55	1.79	25,100	B.
February.....	1,280	315	786	2.98	3.10	43,700	B.
March.....	735	358	511	1.94	2.24	31,400	A.
April.....	1,200	410	887	3.36	3.75	52,800	A.
May.....	1,930	990	1,470	5.57	6.42	90,400	A.
June.....	2,060	840	1,220	4.62	5.16	72,600	A.
July.....			680	2.58	2.97	41,800	C.
August.....			375	1.42	1.64	23,100	C.
September.....			295	1.12	1.25	17,600	C.
The year.....	14,100		835	3.16	42.98	605,000	
1908-9.							
October.....			285	.960	1.11	17,500	C.
November.....			380	1.28	1.43	22,600	C.
December.....			230	.774	.89	14,100	C.
January.....			350	1.18	1.36	21,500	C.
February.....			275	.926	.96	15,300	C.
March.....			390	1.31	1.51	24,000	C.
April.....			625	2.10	2.34	37,200	C.
May.....	1,420	705	1,030	3.47	4.00	63,300	A.
June.....	2,640	705	1,560	5.25	5.86	92,800	A.
July.....	970	475	678	2.28	2.63	41,700	C.
August.....	500	300	384	1.29	1.49	23,600	B.
September.....	385	205	285	.960	1.07	17,000	A.
The year.....			540	1.82	24.65	391,000	

Month.	Observed discharge of river in second-feet.			Run-off in acre-feet.			Natural discharge in second feet.		Depth in inches.	Accuracy.
	Maximum.	Minimum.	Mean.	River.	Tieton canal.	Natural.	Mean.	Mean per square mile.		
1909-10.										
October.....	260	156	207	12,700		12,700	207	0.697	0.80	A.
November.....	7,290	180	1,580	94,000		94,000	1,580	5.32	5.94	B.
December.....	1,870	210	648	39,800		39,800	648	2.18	2.51	B.
January.....			370	22,800		22,800	370	1.25	1.44	B.
February.....			335	18,600		18,600	335	1.13	1.18	B.
March.....	3,380	870	1,640	101,000		101,000	1,640	5.52	6.36	B.
April.....	2,990	840	1,390	82,700		82,700	1,390	4.68	5.22	B.
May.....	2,530	1,060	1,480	91,000	1,700	92,700	1,510	5.08	5.86	B.
June.....	1,800	630	976	58,100	2,570	60,700	1,020	3.43	3.83	B.
July.....	780	360	583	35,800	2,540	38,300	623	2.10	2.42	B.
August.....	402	240	320	19,700	1,090	20,800	338	1.14	1.31	B.
September.....			260	15,500		15,500	260	.875	.98	B.
The year.....	7,290	156	817	592,000	7,900	600,000	828	2.79	37.85	

Monthly discharge of Tieton River above and below Oak Creek near Naches—Con.

Month.	Observed discharge in second-feet.			Run-off in acre-feet.			Natural discharge in second-feet.		Depth in inches.	Accuracy.
	Maximum.	Minimum.	Mean.	River.	Tieton canal.	Natural.	Mean.	Mean Per square mile.		
1910-11										
October.....			410	25,200		25,200	410	1.38	1.59	B.
November.....			600	35,700		35,700	600	2.02	2.25	C.
December.....			340	20,900		20,900	340	1.14	1.31	C.
January.....			260	16,000		16,000	260	.875	1.01	C.
February.....			205	11,400		11,400	205	.690	.72	C.
March.....			350	21,500		21,500	350	1.18	1.36	C.
April.....	870	380	563	33,500	1,360	34,900	587	1.97	2.20	A.
May.....	1,200	630	785	48,300	2,770	51,100	831	2.80	3.23	B.
June.....	1,600	630	1,060	63,100	6,070	69,200	1,160	3.91	4.36	B.
July.....	690	305	550	33,800	7,690	41,500	675	2.27	2.62	A.
August.....	340	192	249	15,300	6,270	21,600	351	1.18	1.36	A.
September.....			276	16,400	2,960	19,400	326	1.10	1.23	B.
The year.....			472	341,000	27,190	368,000	509	1.71	23.24	
1911-12.										
October.....			201	12,400	117	12,500	203	.684	.79	B.
November.....	930	172	327	19,500	1,270	20,800	350	1.18	1.32	B.
December.....	288	172	227	14,000	563	14,600	237	.798	.92	A.
January.....	1,190	150	444	27,300		27,300	444	1.49	1.72	B.
February.....	660	339	436	25,100		25,100	436	1.47	1.58	B.
March.....	543	235	306	18,800		18,800	306	1.03	1.19	B.
April.....	1,150	570	740	44,000	628	44,600	750	2.53	2.82	B.
May.....	2,150	720	1,390	85,600	8,670	94,200	1,530	5.15	5.94	B.
June.....	1,950	570	1,170	69,600	11,600	81,200	1,360	4.58	5.11	B.
July.....	690	168	406	25,000	10,200	35,200	572	1.93	2.22	B.
August.....	570	120	186	11,400	11,300	22,700	369	1.24	1.43	B.
September.....	339	134	190	11,300	5,220	16,500	277	.933	1.04	A.
The year.....	2,150	120	502	364,000	49,600	414,000	570	1.92	26.08	
1912-13.										
October.....	213	168	183	11,200		11,200	183	.616	.71	B.
November.....	612	172	293	17,400		17,400	293	.987	1.10	A.
December.....	339	168	197	12,100		12,100	197	.663	.76	A.
January.....	339	213	265	16,300		16,300	265	.892	1.03	B.
February.....	750	221	366	20,300		20,300	366	1.23	1.28	B.
March.....	378	270	331	20,400		20,400	331	1.11	1.28	A.
April.....	1,310	339	760	45,200	1,240	46,400	780	2.63	2.93	A.
May.....	2,630	594	1,170	71,900	10,900	82,800	1,350	4.55	5.25	A.
June.....	3,080	938	1,660	98,600	10,900	110,000	1,840	6.20	6.92	B.
July.....	1,230	384	702	43,200	13,900	57,100	928	3.12	3.60	A.
August.....	402	56	226	13,900	14,600	28,500	463	1.56	1.80	B.
September.....	905	97	252	15,000	8,210	23,200	390	1.31	1.46	B.
The year.....	3,080	56	532	386,000	59,800	445,000	615	2.07	28.12	

NOTE.—Discharge, July to September, 1907, October, 1908, to April, 1909, January, February, September to December, 1910, and January to March, September, and October, 1911, estimated by comparison, with records at headworks of Tieton canal.

Yearly discharge of Tieton River above and below Oak Creek near Naches.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1903.....	4,850	238	261	Oct.....	718	2.42	32.84	520,000
1904.....	3,140	258	293	Feb.....	739	2.49	33.90	536,000
1905.....	1,670	208	278	Oct.....	471	1.59	21.53	341,000
1906.....	1,370	168	220	Dec.....	461	1.70	23.02	334,000
1907.....	14,100		289	Oct.....	835	3.16	42.98	605,000
1909.....			230	Dec.....	540	1.82	24.65	391,000
1910.....	7,290	156	207	Oct.....	828	2.79	37.85	600,000
1911.....			205	Feb.....	509	1.71	23.24	368,000
1912.....	2,150	120	203	Oct.....	570	1.92	26.08	414,000
1913.....	3,080	56	183	Oct.....	615	2.07	28.12	445,000
The period.	14,100	56	183	Oct., 1912.	629	2.17	29.42	455,000

NORTH FORK OF AHTANUM CREEK NEAR TAMPICO (137).

In NW. $\frac{1}{4}$ sec. 2, T. 12 N., R. 15 E., at Prior ranch, 100 feet below Nasty Creek and $3\frac{1}{2}$ miles northwest of Tampico, in Yakima County; above all diversions. Staff gage used prior to April 2, 1913, and from August 20, 1915, to September 5, 1916; water-stage recorder used April 2, 1913, to August 19, 1915, and after September 5, 1916. The gaging station is equipped with an artificial concrete control and gaging bridge (Pl. VIII, B.)

Drainage area, 69 square miles; measured on topographic maps.

Monthly discharge of North Fork of Ahtanum Creek near Tampico.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907.							
September.....	27	27	27.0	0.391	0.44	1,610	B.
1907-8.							
October.....	36	20	25.5	.370	.43	1,570	A.
November 1-6.....	36	20	28.0	.406	.09	333	A.
April 6-30.....	368	73	172	2.49	2.32	8,530	B.
May.....	262	156	206	2.99	3.45	12,700	B.
June.....	407	166	261	3.78	4.22	15,500	B.
July.....	229	46	110	1.59	1.83	6,760	B.
August.....	46	27	33.5	.486	.56	2,060	A.
September.....	27	20	22.6	.328	.37	1,340	A.
1908-9.							
October.....	36	20	24.7	.358	.41	1,520	A.
November 1-24.....	36	20	26.5	.384	.34	1,260	A.
May 25-31.....	221	146	188	2.72	.71	2,610	A.
June.....	361	116	188	2.72	3.04	11,200	A.
July.....	108	35	60.2	.872	1.01	3,700	A.
August.....	35	24	28.7	.416	.48	1,760	B.
September.....	27	14	21.4	.310	.35	1,270	C.
1909-10.							
October.....	17	17	17.0	.246	.28	1,050	C.
November.....	350	20	82.4	1.19	1.33	4,900	C.
December.....	180	68	99.1	1.44	1.66	6,090	B.
January.....	411	68	113	1.64	1.89	6,950	B.
February.....	90	51	64	.928	.97	3,550	B.
March.....	684	.....	303	4.39	5.06	18,600	D.
April.....	.....	.....	222	3.22	3.59	13,200	C.
May.....	.....	.....	246	3.57	4.12	15,100	C.
June.....	215	68	125	1.81	2.02	7,440	B.
July.....	62	23	44.1	.639	.74	2,710	B.
August.....	23	17	21.7	.314	.36	1,330	B.
September.....	31	23	28.2	.409	.46	1,680	B.
The year.....	684	17	114	1.65	22.48	82,600	
1910-11.							
October.....	40	23	28.5	.413	.48	1,750	B.
November.....	70	23	33.5	.486	.54	1,990	B.
December.....	40	23	31.7	.459	.53	1,950	B.
January.....	40	23	31.6	.458	.53	1,940	C.
February.....	31	23	28.9	.419	.44	1,600	C.
March.....	169	23	50.1	.726	.84	3,080	B.
April.....	272	87	127	1.84	2.05	7,560	C.
May.....	272	106	156	2.26	2.61	9,590	B.
June.....	411	103	217	3.14	3.50	12,900	B.
July.....	103	31	56.8	.823	.95	3,490	B.
August.....	.....	.....	20.0	.290	.33	1,230	C.
September.....	.....	.....	22.0	.319	.36	1,310	D.
The year.....	411	.....	66.8	.968	13.16	48,400	

Monthly discharge of North Fork of Ahtanum Creek near Tampico—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911-12.							
October.....			20.0	0.290	0.33	1,230	D.
November.....			24.0	.348	.39	1,430	D.
December.....			29.0	.420	.48	1,780	D.
January.....	85	15	32.8	.475	.55	2,020	D.
February.....	85	22	43.7	.633	.68	2,510	D.
March.....	315	31	65.6	.951	1.10	4,030	D.
April.....	272	145	176	2.55	2.84	10,500	D.
May.....	629	197	385	5.58	6.43	23,700	D.
June.....	367	92	204	2.96	3.30	12,100	D.
July.....	92	33	49.7	.720	.83	3,060	D.
August.....	37	21	28.2	.409	.47	1,730	D.
September.....	41	21	24.9	.361	.40	1,480	D.
The year.....	629	15	90.3	1.31	17.80	65,600	
1912-13.							
October.....	26	21	21.8	.316	.36	1,340	D.
November.....	43	16	26.5	.384	.43	1,580	D.
December.....	63	17	23.5	.341	.39	1,440	D.
January.....	57	23	31.3	.454	.52	1,920	D.
February.....	63	20	34.1	.494	.51	1,890	C.
March.....	56	24	36.5	.529	.61	2,240	B.
April.....	178	40	110	1.59	1.77	6,550	A.
May.....	388	122	216	3.13	3.61	13,300	A.
June.....	427	143	240	3.48	3.88	14,300	A.
July.....	138	44	88.7	1.29	1.49	5,450	B.
August.....	40	25	31.5	.457	.53	1,940	B.
September.....	46	23	26.3	.381	.42	1,560	B.
The year.....	427	16	73.8	1.07	14.52	53,500	
1913-14.							
October.....	30	22	26.2	.380	.44	1,610	B.
November.....	28	20	22.8	.330	.37	1,360	B.
December.....	140	14	32.2	.467	.54	1,980	B.
January.....			42.0	.609	.70	2,580	D.
February.....			34.0	.493	.51	1,890	D.
March.....			115	1.67	1.92	7,070	C.
April.....	321	82	224	3.25	3.63	13,300	A.
May.....	307	212	249	3.61	4.16	15,300	A.
June.....	275	92	157	2.28	2.54	9,340	A.
July.....	92	33	54.5	.790	.91	3,350	A.
August.....	32	21	25.0	.362	.42	1,540	A.
September.....	39	20	23.2	.336	.37	1,380	B.
The year.....	321	14	83.8	1.21	16.51	60,700	
1914-15.							
October.....	32	18	23.6	.342	.39	1,450	A.
November.....	83	29	42.3	.613	.68	2,520	A.
December.....	62	22	37.0	.536	.62	2,280	A.
January.....	136	22	37.6	.545	.63	2,310	A.
February.....	34	20	21.8	.316	.33	1,210	A.
March.....	140	22	67.5	.978	1.13	4,150	A.
April.....	244	134	167	2.42	2.70	9,940	A.
May.....	178	111	132	1.91	2.20	8,120	A.
June.....	126	40	80.9	1.17	1.30	4,810	A.
July.....	39	22	30.0	.435	.50	1,840	A.
August.....	24	16	18.8	.272	.31	1,160	A.
September.....	18	14	15.9	.230	.26	946	A.
The year.....	244	14	56.3	.816	11.05	40,700	
1915-16.							
October.....			16.5	.239	.28	1,010	B.
May.....			286	4.14	4.77	17,600	C.
June.....			418	6.06	6.76	24,900	B.
July.....			226	3.28	3.78	13,900	B.
August.....	98		60.7	.880	1.01	3,730	A.
September.....	40	30	34.5	.500	.56	2,050	A.

Monthly discharge of North Fork of Ahtanum Creek near Tampico—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1916-17.							
October.....	32	28	29.8	0.432	0.50	1,830	A.
November.....	34	10.6	28.0	.406	.45	1,670	A.
December.....	28	.....	23.6	.342	.39	1,450	A.
January 1-13.....	.....	.....	21.0	.304	.15	541	B.
March 5-31.....	26	18.8	20.0	.290	.29	1,070	A.
April.....	76	20	43.7	.633	.71	2,600	A.
May.....	376	63	198	2.87	3.31	12,200	A.
June.....	382	215	279	4.04	4.51	16,600	A.
July.....	220	47	113	1.64	1.89	6,950	A.
August.....	45	25	32.5	.471	.54	2,000	A.
September.....	33	19.5	23.2	.336	.37	1,380	A.
1917-18.							
April 14-30.....	176	84	131	1.90	1.20	4,420	A.
May.....	238	108	160	2.32	2.68	9,840	A.
June.....	263	62	152	2.20	2.46	9,040	B.
July.....	56	27	37.8	.548	.63	2,320	A.
August.....	28	19	24.1	.349	.40	1,480	A.
September.....	22	18	18.9	.274	.31	1,120	A.
The period.....	.....	.....	.....	.....	.....	28,200	.....
1918-19.							
October 1-10.....	25	17.5	19.6	.284	.11	389	A.
April 6-30.....	203	85	132	1.91	1.78	6,550	A.
May.....	331	124	189	2.74	3.16	11,600	A.
June.....	193	96	144	2.09	2.33	8,570	A.
July.....	94	32	55.9	.810	.93	3,440	A.
August.....	32	22	25.7	.372	.43	1,580	A.
September.....	31	20	23.3	.338	.38	1,390	A.

NOTE.—Maximum discharge during period of record, 728 second-feet at 9 a. m. June 18, 1916; minimum discharge, 7 second-feet at noon Nov. 12, 1916; discharge may have been less during some winters when record was discontinued.

Monthly means for April and May, 1910, were computed by subtracting the discharge at South Fork from that at "The Narrows" station. The mean for March is found by making a similar estimate for the period Mar. 10 to 31. This estimate gives only approximate results for March as there was probably a considerable inflow from the intervening area, but the results for April and May are probably fair, as the inflow had largely ceased by that time. Monthly discharge August to December, 1911, and January to March, 1914, partly estimated by comparison with other gaging stations in the Ahtanum basin.

Discharge for year ending Sept. 30, 1912, not previously published, on account of uncertain gage-height record. The results for that year should be used with caution.

Yearly discharge of North Fork of Ahtanum Creek near Tampico.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maxi- mum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1910.....	684	17	17.0	Oct.....	114	1.65	22.48	82,600
1911.....	411	.....	20.0	Aug.....	66.8	.968	13.16	48,400
1912.....	629	15	20.0	Oct.....	90.3	1.31	17.80	65,600
1913.....	427	16	21.8	Oct.....	73.8	1.07	14.52	53,500
1914.....	321	14	22.8	Nov.....	83.8	1.21	16.51	60,700
1915.....	244	14	15.9	Sept.....	56.3	.816	11.05	40,700
The period..	684	14	15.9	Sept., 1915	80.8	1.17	15.92	58,600

AHTANUM CREEK AT THE NARROWS NEAR TAMPICO (138).

Staff gage at The Narrows, 3 miles below junction of North and South forks and 3½ miles east of Tampico, in Yakima County.

Station was below all diversions in upper Ahtanum Valley. The John Cox ditch diverted water around the gage at high water.

Drainage area, 121 square miles; measured on topographic maps.

Monthly discharge of Ahtanum Creek at The Narrows near Tampico.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1908.					
June 25-30.....	214	176	192	2,280	B.
July.....	186	35	105	6,460	B.
August.....	33	23	26.6	1,640	B.
September.....	25	24	24.4	1,450	B.
The period.....				11,800	
1908-9.					
October.....	37	19	23.8	1,460	B.
November.....	44	27	33.2	1,980	B.
December.....	40	17	31.8	1,960	B.
January.....	91	19	41.5	2,550	B.
February.....	59	33	41.7	2,320	B.
March.....	168	49	102	6,270	A.
April.....	150	91	125	7,440	A.
May.....	254	130	183	11,300	A.
June.....	393	106	217	12,900	A.
July.....	100	30	61.1	3,760	A.
August.....	31	24	25.5	1,570	B.
September.....	25	22	23.5	1,400	B.
The year.....	393	17	75.8	51,900	
1909-10.					
October.....	25	24	24.6	1,510	B.
November.....	512	25	128	7,620	A.
December.....	262	89	129	7,930	A.
January.....	705	130	220	13,500	C.
February.....	281	151	184	10,200	B.
March.....	1,330	242	501	30,800	C.
April.....	502	188	285	17,000	B.
May.....	524	228	333	20,500	B.
June.....	257	73	141	8,390	A.
July.....	70	24	44.6	2,740	A.
August.....	24	19	21.8	1,340	A.
September.....	26	18	23.3	1,390	A.
The year.....	1,330	18	170	123,000	
1910-11.					
October.....	24	16	18.9	1,160	A.
November.....	86	16	45.5	2,710	A.
December.....	56	33	43.5	2,670	A.
January.....	41	24	32.8	2,020	B.
February.....	41	26	31.6	1,760	B.
March.....	126	30	70.0	4,300	A.
April.....	146	58	94.4	5,620	A.
May.....	250	126	152	9,350	A.
June.....	1,100	98	269	16,000	B.
July.....	98	28	53.7	3,300	A.
August.....	33	20	25.2	1,550	B.
September.....	81	17	34.5	2,050	B.
The year.....	1,100	16	72.5	52,500	
1911-12.					
October.....	28	24	25.2	1,550	B.
November.....	33	20	25.1	1,490	B.
December.....	33	20	24.2	1,490	B.
January.....	89	17	39.8	2,450	B.
February.....	146	44	64.9	3,730	A.
March.....	146	33	57.4	3,530	A.
April.....	280	126	157	9,340	A.
May.....	430	169	299	18,400	B.
June.....	267	94	180	10,700	A.
July.....	94	27	52.3	3,220	A.
August.....	32	21	26.8	1,650	A.
September.....	27	19	21.6	1,290	B.
The year.....	430	17	81.0	58,800	

Monthly discharge of Ahtanum Creek at The Narrows near Tampico—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1912-13.					
October.....	27	19	23.5	1,440	B.
November.....	47	25	32.7	1,940	A.
December.....	73	19	28.5	1,750	A.
January.....	85	32	46.6	2,870	B.
February.....	114	36	55.2	3,070	B.
March.....	94	47	63.3	3,890	A.
April.....	236	59	141	8,390	A.
May.....	591	121	288	17,700	B.
June.....	545	161	317	18,900	A.
July.....	161	42	81.8	5,030	A.
August.....	42	27	34.0	2,090	A.
September.....	27	21	26.2	1,560	A.
The year.....	591	19	94.8	68,600	

Yearly discharge of Ahtanum Creek at The Narrows, near Tampico.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1909.....	393	17	23.5	Sept.....	75.8	54,900
1910.....	1,330	18	21.8	Aug.....	170	123,000
1911.....	1,100	16	18.9	Oct.....	72.5	52,500
1912.....	430	17	21.6	Sept.....	81.0	58,800
1913.....	591	19	23.5	Oct.....	94.8	68,600
The period.....	1,330	16	18.9	Oct., 1910.	98.8	71,600

AHTANUM CREEK NEAR YAKIMA (139).

Staff gage at Northern Pacific Railway bridge 500 feet above mouth and 1 mile southeast of Yakima, in Yakima County.

A considerable amount of water was diverted above the station for irrigation.

Monthly discharge of Ahtanum Creek near Yakima.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
May 11-31.....	530	220	389	16,200	C.
June.....	480	200	346	20,600	C.
July.....	160	30	87.8	5,400	C.
August.....	30	10	19.4	1,190	C.
September.....	10	0	2.7	161	D.
October.....	10	0	3.6	214	D.
November.....	35	6	14.9	887	C.
The period.....				44,700	
1907.					
August 27-31.....	10.3	10.3	10.3	102	B.
September.....	15	10.3	12.9	768	B.

Monthly discharge of Ahtanum Creek near Yakima—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1907-8.					
October.....	13	13	13.0	799	B.
November.....	22	15	16.7	994	B.
December.....	38	22	30.8	1,890	B.
January.....	46	32	38.8	2,390	B.
February.....	74	27	37.3	2,150	B.
March.....	419	55	189	11,600	B.
April.....	176	98	136	8,090	B.
May.....	176	98	146	8,980	B.
June.....	419	110	261	15,500	B.
July.....	118	4.2	26.5	1,630	D.
The period.....				54,000	
1910.					
March.....	1,530	275	580	35,700	C.
April.....	382	176	246	14,600	B.
May.....	596	212	371	22,800	B.
June.....	300	14	102	6,070	B.
July.....	15	8	10.5	646	B.
August.....	10	7.8	8.1	498	B.
September.....	8.2	7.8	8.0	476	B.
The period.....				80,800	
1910-11.					
October.....	9.2	8	8.9	547	B.
April.....	107	23	63.4	3,770	C.
May.....	178	23	74.6	4,590	B.
June.....	350	93	167	9,940	C.
July.....	93	6	21.3	1,310	D.
August.....	9	5	7.0	430	D.
September.....	11	6	8.0	476	D.
1911-12.					
October.....	11	6	7.3	449	D.
November.....	17	6	10.1	601	D.
December.....	23	11	18.7	1,150	D.
January.....	110	11.8	33.9	2,080	A.
February.....	114	35.8	59.0	3,390	A.
March.....	84.0	47.0	56.3	3,460	A.
April.....	167	53.5	100	5,950	A.
May.....	258	47.0	163	10,000	A.
June.....	175	11.8	104	6,190	A.
July.....	26.2	9.4	15.5	953	A.
August.....	15.0	7.0	9.33	577	B.
September.....	11.8	7.0	9.79	583	B.
The year.....	258	6.0	48.8	35,400	

SOUTH FORK OF AHTANUM CREEK NEAR TAMPICO (140).

Staff gage prior to March, 1915, at Shannafelt ranch, 1 mile above North Fork and 2 miles southwest of Tampico, in Yakima County; beginning in March, 1915, at Conrad ranch, 2½ miles above North Fork and 2¾ miles southwest of Tampico.

Several small irrigation ditches diverted water above gage at original site. One very small ditch diverts water above gage at new site.

Drainage area, 28 square miles at original location, and 26 square miles at new location; measured on topographic maps and Plate I, Water-Supply Paper 369.

Monthly discharge of South Fork of Ahtanum Creek near Tampico.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908.					
January.....	22	17	18.7	1,150	B.
February 1-18.....	22	17	17.9	639	B.
May.....	73	45	57.3	3,520	B.
June.....	120	32	75.1	4,470	B.
July.....	32	15	25.6	1,570	B.
August.....	15	9	11.3	695	B.
September.....	11	8	9.07	540	B.
1908-9.					
October.....	9	6.0	7.55	464	B.
November.....	13	6.0	8.13	484	B.
December.....	11	4.0	9.74	599	B.
January.....	32	4.5	8.26	508	C.
February.....	15	7.5	10.4	578	B.
March.....	52	13	28.4	1,750	A.
April.....	43	20	30.2	1,800	A.
May.....	61	26	40.7	2,500	A.
June.....	^a 150	18	52.5	3,120	B.
July.....	15	5.5	8.48	521	B.
August.....	5.2	4.4	4.94	304	B.
September.....	4.7	4.2	4.32	257	B.
The year.....	^a 150	4.2	17.8	12,900	
1909-10.					
October.....	5.0	4.3	4.46	274	B.
November.....	211	5.0	28.3	1,680	A.
December.....	88	12	30.0	1,840	B.
January.....	131	8	28.7	1,760	C.
February.....	42	15	22.8	1,270	C.
March.....	362	56	145	8,920	C.
April.....	124	38	63.4	3,770	B.
May.....	148	44	86.9	5,340	C.
June.....	42	17	26.3	1,560	B.
July.....	16	8	10.7	658	B.
August.....	8	4	5.8	357	B.
September.....	6	4	5.6	333	B.
The year.....	362	4	38.3	27,800	
1910-11.					
October.....	5.6	1.6	4.06	250	C.
November.....	11	5.1	7.16	426	C.
December.....	11	6.9	8.46	520	C.
January.....	8.7	6.9	8.25	507	C.
February.....	8.7	7.6	8.56	475	C.
March.....	57	6.9	25.4	1,560	B.
April.....	45	15	22.5	1,340	B.
May.....	43	19	27.6	1,700	C.
June.....	113	20	46.2	2,750	B.
July.....	19	6.0	10.6	652	C.
August.....	5.8	1.4	3.58	220	C.
September.....	12	.3	4.97	296	C.
The year.....	113	.3	14.8	10,700	
1911-12.					
October.....	7.1	4.2	5.07	312	B.
November.....	9.9	7.1	7.93	472	B.
December.....	8.6	7.8	7.83	481	B.
January.....	14	8	10.7	658	C.
February.....	34	7	15.6	897	B.
March.....	34	6	14.3	879	A.
April.....	52	27	36.1	2,150	A.
May.....	74	27	51.4	3,160	A.
June.....	42	13	29.2	1,740	A.
July.....	15	7	10.7	658	B.
August.....	9	6	7.48	460	B.
September.....	9	5	6.23	371	B.
The year.....	74	4.2	16.9	12,200	

^a Estimated.

Monthly discharge of South Fork of Ahtanum Creek near Tampico—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1912-13.					
October.....	9	5	7.42	456	B.
November.....	14	6	9.87	587	A.
December.....	22	8	9.52	585	B.
January.....	56	8.0	13.5	830	B.
February.....	28	5.5	11.9	661	B.
March.....	22	9	13.5	830	B.
April.....	55	14.2	36.4	2,170	B.
May.....	153	25	67.4	4,140	A.
June.....	146	35	78.5	4,670	A.
July.....	34	8.4	16.1	990	B.
August.....	8.2	6.1	7.30	449	C.
September.....	8.4	6.6	7.00	416	C.
The year.....	153	5	23.2	16,800	
1913-14.					
October.....	8.0	7.2	7.49	461	B.
November.....	9.3	7.0	7.60	452	B.
December.....	10.8	4.1	6.61	406	B.
January.....	45	6.0	13.3	818	C.
February.....	25	6.2	10.9	605	C.
March.....	100	25	63.2	3,890	C.
April.....	125	52	95.2	5,660	D.
May.....	154	67	107	6,580	D.
June.....	70	21	42.1	2,510	C.
July.....	20	5.8	10.6	652	C.
August.....	7.0	4.5	5.71	351	C.
September.....	6.0	4.5	5.33	317	C.
The year.....	154	4.1	31.3	22,700	
1914-15.					
October.....	8.5	3.1	5.89	362	C.
March 15-31.....	46	31	37.4	1,260	C.
April.....	62	33	42.7	2,540	A.
May.....	36	26	30.9	1,900	A.
June.....	25	11	17.5	1,040	A.
July.....	11	6.8	9.13	561	A.
August.....	8.1	5.1	6.63	408	B.
September.....	6.0	4.3	5.15	306	B.
1915-16.					
October.....	10	5.1	5.96	366	A.
June.....	203	76	112	6,660	B.
July.....	92	26	55.1	3,390	A.
August.....	25	14	18.5	1,140	A.
September.....	15	11	12.8	762	A.
1916-17.					
October.....	11.6	9.5	10.4	640	A.
November.....			9.60	571	B.
April.....	26	8.7	15.9	946	A.
May.....	94	21	43.5	2,670	A.
June.....	90	42	64.3	3,830	A.
July.....	40	12.2	20.8	1,280	A.
August.....	11.6	8.3	9.67	595	A.
September.....	10.5	8.0	8.50	506	A.
1917-18.					
October.....	8.0	6.8	7.28	448	A.
April 13-30.....	36	20	29.3	1,050	A.
May.....	50	35	41.2	2,530	A.
June.....	47	16.1	32.0	1,900	A.
July.....	20	9.0	11.6	713	A.
August.....	11.4	6.8	8.58	528	A.
September.....	7.5	5.6	6.54	389	A.
1918-19.					
October.....	7.5	5.6	6.45	397	A.
April.....	59	23.4	37.5	2,230	A.
May.....	84	33	48.4	2,980	A.
June.....	46	18.3	30.3	1,800	A.
July.....	18.3	8.8	12.1	744	A.
August.....	8.8	6.5	7.54	464	A.
September.....	8.0	5.6	6.64	395	A.

NOTE.—Maximum discharge during period of record, 362 second-feet Mar. 2, 1910; minimum discharge, 0.3 second-foot Sept. 3, 1911.

Yearly discharge of South Fork of Ahtanum Creek near Tampico.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1909.....	150	4.2	4.32	Sept.....	17.8	12,900
1910.....	362	4.0	4.46	Oct.....	38.3	27,800
1911.....	113	.3	3.58	Aug.....	14.8	10,700
1912.....	74	4.2	5.07	Oct.....	16.9	12,200
1913.....	153	5.0	7.00	Sept.....	23.2	16,800
1914.....	154	4.1	5.33	Sept.....	31.3	22,700
The period.....	362	.3	3.58	Aug., 1911.	23.7	17,200

NEW RESERVATION CANAL AT PARKER (141).

Staff gage at different sites from three-fourths mile to 1 mile below intake and half a mile northwest of Parker, in Yakima County.

Canal diverts from right bank of Yakima River in sec. 20, T. 12 N., R. 19 E., about 1½ miles above intake of Old Reservation canal. The water is used for irrigation.

Monthly discharge of New Reservation canal at Parker.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
April 16-30 ^a			20.0	595	
May ^a	38	17	27.0	1,660	
June.....	90	21	49.1	2,920	
July.....	97	63	86.4	5,310	
August.....	149	38	69.0	4,110	
September.....	90	38	73.6	4,380	
The period.....				19,000	
1904-5.					
October 1-15 ^b			50.0	1,490	
June.....	114	70	97.6	5,810	B.
July.....	156	111	137	8,420	B.
August.....	166	60	130	7,990	C.
1906.					
April 22-30.....	166	117	137	2,450	C.
May.....	222	0	192	11,800	B.
June.....	260	0	173	10,300	B.
August.....	152	27	67.8	4,170	B.
September.....	111	50	83.1	4,940	B.
1906-7.					
October.....	124	50	88.4	5,440	B.
May.....	268	173	235	14,400	B.
June.....	284	260	271	16,100	B.
July.....	288	229	256	15,700	B.
August 1-10.....	219	194	206	14,100	B.
1908.					
April 15-30.....	275	224	248	7,870	B.
May.....	327	269	296	18,200	B.
June.....	352	209	255	15,200	B.
July.....	345	164	260	16,000	B.
August.....	240	164	201	12,400	B.
September.....	186	83	152	9,040	B.
The period.....				78,700	

^a Discharge Apr. 16 to May 8, estimated.

^b Estimated.

Monthly discharge of New Reservation canal at Parker—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1908-9.					
October.....	142	39	105	6,460	B.
November.....	39	21	26.1	1,550	B.
December.....	44	18	24.1	1,480	B.
April.....	286	75	205	12,200	B.
May.....	328	244	284	17,500	B.
June.....	328	179	240	14,300	B.
July.....	342	231	288	17,700	B.
August.....	244	154	186	11,400	B.
September.....	192	120	140	8,330	B.
1909-10.					
October.....	205	100	159	9,780	B.
April.....	347	49	251	14,900	B.
May.....	363	325	347	21,300	B.
June.....	340	95	296	17,600	B.
July.....	387	81	277	17,000	B.
August.....	226	61	128	7,870	B.
September.....	136	88	103	6,130	B.
1910-11.					
October.....	190	116	159	9,780	B.
April.....	398	112	301	17,900	B.
May.....	454	0	366	22,500	B.
June.....	446	290	394	23,400	B.
July.....	446	0	353	21,700	B.
August.....	348	90	245	15,100	A.
September.....	358	37	169	10,100	A.
1911-12.					
October 1-28.....	214	108	169	9,390	A.
April.....	511	103	400	23,800	B.
May.....	595	459	539	33,100	B.
June.....	507	346	439	26,100	B.
July.....	510	244	430	26,400	B.
August.....	320	76	234	14,400	A.
September.....	320	0	253	15,100	A.
1912-13.					
October.....	230	86	167	10,900	C.
April.....	536	120	340	10,800	C.
May.....	570	514	549	33,800	C.
June.....	544	323	452	26,900	C.
July.....	574	372	498	30,600	C.
August.....	448	94.3	348	21,400	C.
September.....	422	162	288	17,100	C.
1913-14.					
October.....	270	94.3	159	9,780	B.
April.....	572	62.3	421	25,000	B.
May.....	662	374	572	35,200	B.
June.....	628	358	533	31,700	B.
July.....	614	340	491	30,200	B.
August.....	558	219	434	26,700	B.
September.....	406	129	183	10,900	B.
1914-15.					
October 1-14.....	189	71	155	4,330	B.
April 7-30.....	588	36	337	16,000	B.
May.....	672	498	596	36,600	B.
June.....	628	419	541	32,200	B.
July.....	607	363	469	28,800	B.
August.....	496	34	315	19,400	B.
September.....	215	29	120	7,130	B.
1915-16.					
October.....	244	117	170	10,400	B.
November 1-13.....	253	117	177	4,570	B.
April.....	680	14	346	20,600	B.
May.....	746	649	699	43,000	B.
June.....	730	308	625	37,200	B.
July.....	649	438	505	31,000	B.
August.....	656	416	541	33,200	B.
September.....	440	262	329	19,600	B.
1916-17.					
October 1-14.....	307	232	261	7,250	B.
April 18-30.....	605	220	440	11,400	B.
May.....	821	350	714	43,900	B.
June.....	845	550	748	44,500	B.
July.....	869	30	736	45,300	B.
August.....	753	588	665	40,900	B.
September.....	588	194	362	21,500	B.

Monthly discharge of New Reservation canal at Parker—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1917-18.					
October 1-14.....	226	188	210	5,830	A.
April 10-30.....	730	19	350	14,600	A.
May.....	934	110	803	49,400	A.
June.....	987	474	939	55,900	A.
July.....	1,010	633	813	50,000	A.
August.....	755	609	693	42,600	A.
September.....	730	2	535	31,800	A.
1918-19.					
October 1-16.....	250	63	210	6,660	C.
April 10-30.....	844	89	568	23,700	A.
May.....	1,270	678	1,090	67,300	A.
June.....	1,210	596	996	59,200	A.
July.....	1,180	482	934	57,400	A.
August.....	1,050	874	987	60,700	A.
September.....	972	393	605	36,000	A.

NOTE.—Maximum discharge during period of record; 1,270 second-feet May 29, 1919. No flow reported during nonirrigating season.

OLD RESERVATION CANAL AT PARKER (142).

Staff gage prior to June 23, 1908, at Northern Pacific Railway bridge, half a mile below intake; thereafter 300 feet below intake and 500 feet above controlling waste of first lateral, 1 mile east of Parker, in Yakima County.

Canal diverts from right bank of Yakima River in sec. 28, T, 12 N., R. 19 E., half a mile above intake of Sunnyside canal. The water is used for irrigation.

Monthly discharge of Old Reservation canal at Parker.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1904.					
April 16-30 ^a			100	2,980	
May ^a			130	7,990	
June ^a	190	111	145	8,630	
July.....	214	112	164	10,100	
August.....	170	130	149	9,160	
September ^b			100	5,950	
October 1-15 ^b			90	2,680	
The period.....	214	111	130	47,500	
1906.					
May.....	177	152	159	9,780	
June.....	163	77	112	6,600	
July.....	159	83	133	8,180	
August.....	75	15	45.5	2,800	
September.....	64	36	58.3	3,470	
The period.....				30,900	
1906-7.					
October.....	36	36	36.0	2,210	
May 6-31.....	324	307	314	16,200	B.
June.....	307	194	247	14,700	B.
July.....	307	96	217	13,300	B.
August.....	164	80	105	6,460	B.
September 1-15.....	114	105	109	3,240	B.

^a Estimated Apr. 15 to June 6.

^b Estimated Sept. 1 to Oct. 15.

Monthly discharge of Old Reservation canal at Parker—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908.					
April 15-30.....	324	242	253	8,030	B.
May.....	274	214	255	15,700	R.
June.....	290	153	207	12,300	B.
July.....	290	114	204	12,500	B.
August.....	164	123	142	8,730	B.
September.....	148	66	108	6,430	B.
The period.....				63,700	
1908-9.					
October.....	66	52	60.5	3,720	B.
November.....	52	35	42.0	2,500	B.
December.....	35	11	28.3	1,740	B.
June.....	290	172	220	13,100	B.
July.....	268	153	210	12,900	B.
August.....	151	56	106	6,520	B.
September.....	86	50	60.9	3,620	B.
1909-10.					
October.....	114	80	90.6	5,570	B.
April.....	287	49	162	9,640	B.
May.....	259	229	248	15,200	B.
June.....	247	198	212	12,600	B.
July.....	192	92	150	9,220	B.
August.....	115	60	81.0	4,980	B.
September.....	87	49	62.7	3,730	B.
1910-11.					
October.....	108	49	97.0	5,960	B.
April 2-30.....	312	192	240	13,800	A.
May.....	326	202	285	17,500	A.
June.....	292	182	237	14,100	A.
July.....	235	125	184	11,300	A.
August.....	132	86	106	6,520	A.
September.....	132	68	100	5,950	A.
1911-12.					
October.....	86	75	80.9	4,970	A.
November 1-25.....	81	45	47.1	2,340	B.
April.....	280	86	222	13,200	A.
May.....	290	151	255	15,700	A.
June.....	285	151	246	14,600	A.
July.....	265	120	178	10,900	A.
August.....	155	120	133	8,180	A.
September.....	159	102	125	7,440	A.
1912-13.					
October.....	113	56	89	5,470	C.
April 14-30.....	308	100	206	6,950	C.
May.....	313	242	290	17,800	C.
June.....	308	134	243	14,500	C.
July.....	313	171	268	16,500	C.
August.....	169	100	136	8,360	C.
September.....	185	100	133	7,910	C.
1913-14.					
October.....	153	69	105	6,460	B.
April.....	292	13	217	12,900	B.
May.....	314	172	255	16,300	B.
June.....	332	180	257	15,300	B.
July.....	257	132	183	11,200	B.
August.....	151	101	134	8,210	B.
September.....	132	73	89.4	5,320	B.
1914-15.					
October 1-14.....	94	60	80.4	2,230	B.
April.....	258	33	130	7,730	A.
May.....	277	196	236	14,500	A.
June.....	236	116	152	9,060	A.
July.....	179	117	134	8,250	A.
August.....	121	8	43.3	2,660	B.
September 1-17.....	24	5	9.06	305	C.

Monthly discharge of Old Reservation canal at Parker—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1915-16.					
April.....	253	15.5	155	9,250	A.
May.....	316	244	285	17,500	A.
June.....	311	212	275	16,400	A.
July.....	217	127	166	10,200	A.
August.....	235	145	198	12,200	A.
September.....	150	56	85.4	5,080	A.
The period.....				70,600	
1916-17.					
October 1-14.....	73	59	69.3	1,920	B.
April.....	220	6.0	115	6,830	B.
May.....	337	225	302	18,600	B.
June.....	337	259	297	17,700	B.
July.....	321	205	278	17,100	B.
August.....	216	175	195	12,000	B.
September.....	178	78.0	121	7,220	B.
1917-18.					
October 1-14.....	83	74	79.4	2,200	A.
April 10-30.....	280	37	192	8,000	A.
May.....	350	3	267	16,400	A.
June.....	350	96	289	17,200	A.
July.....	215	151	174	10,700	A.
August.....	190	123	168	10,300	A.
September.....	137	62	113	6,720	A.
1918-19.					
October 1-15.....	102	78	90.8	2,700	A.
April 13-30.....	328	82	243	8,690	A.
May.....	386	276	329	20,200	A.
June.....	323	239	286	17,000	A.
July.....	320	0	201	12,400	A.
August.....	216	160	186	11,500	A.
September.....	187	38	101	5,690	A.

NOTE.—Maximum discharge during period of record, 386 second-feet May 21, 1919. No flow reported during nonirrigating seasons.

SUNNYSIDE CANAL NEAR PARKER (143).

A short distance below intake, $1\frac{1}{2}$ miles east of Parker, in Yakima County. Staff gage used prior to April 20, 1909; water-stage recorder thereafter.

Canal diverts water from left bank of Yakima River in sec. 28, T. 12 N., R. 19 E., half a mile below intake of Old Reservation canal. The water is used for irrigation.

Monthly discharge of Sunnyside canal near Parker.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1904.					
April 16-30 ^a	512	464	496	14,800	.....
May.....	558	419	529	32,500	.....
June.....	613	491	561	33,400	.....
July ^b	629	0	585	30,200	.....
August.....	617	572	610	37,500	.....
September.....	580	472	524	31,200	.....
October 1-15.....	468	442	456	13,600	.....
The period.....				193,000	

^a Estimated Apr. 16-21.

^b Water shut off 5 days.

Monthly discharge of Sunnyside canal near Parker—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906.					
April.....	579	12	318	18,900	B.
May.....	594	540	583	35,800	B.
June.....	638	33	499	29,700	B.
July.....	704	627	684	42,100	B.
August.....	572	398	476	29,300	B.
September.....	467	334	414	24,600	B.
The period.....				180,000	
1906-7.					
October.....	408	317	386	23,700	B.
April.....	455	151	279	16,600	A.
May.....	519	471	501	30,800	A.
June.....	519	431	490	29,200	A.
July.....	575	303	526	32,300	A.
August.....	559	463	531	32,600	A.
September.....	495	391	424	25,200	A.
1907-8.					
October.....	391	375	387	23,800	A.
April 6-30.....	586	292	503	24,900	A.
May.....	604	586	600	36,900	A.
June.....	604	604	604	35,900	A.
July.....	642	461	607	37,300	A.
August.....	661	623	645	39,700	A.
September.....	623	586	619	36,800	A.
1908-9.					
October.....	586	478	500	30,700	A.
November ^c			75	4,460	D.
April.....	580	380	521	31,000	A.
May.....	623	570	609	37,400	A.
June.....	642	606	620	36,900	A.
July.....	680	642	665	40,900	A.
August.....	703	650	685	42,100	A.
September.....	636	554	603	35,900	A.
1909-10.					
October.....	598	548	554	34,100	A.
March 25-31.....	286	106	184	2,550	B.
April.....	713	319	584	34,800	A.
May.....	718	0	633	38,900	A.
June.....	731	675	702	41,800	A.
July.....	749	688	719	44,200	A.
August.....	735	0	642	39,500	A.
September.....	709	516	632	37,600	A.
1910-11.					
October.....	655	589	628	38,600	A.
November.....	459	0	132	7,860	B.
December.....	80	0	21.6	1,330	C.
January.....	50	0	14.5	892	B.
February.....	217	25	114	6,330	B.
March.....	452	0	83.0	5,100	B.
April.....	794	508	623	37,100	B.
May.....	798	750	771	47,400	B.
June.....	772	746	762	45,300	B.
July.....	861	246	776	47,700	B.
August.....	861	785	834	51,300	B.
September.....	798	654	707	42,100	B.
The year.....	861	0	456	331,000	
1911-12.					
October.....	679	598	643	39,500	
April.....	769	306	580	34,500	A.
May.....	871	766	839	51,600	A.
June.....	938	837	869	51,700	A.
July.....	938	880	910	56,000	A.
August.....	896	746	822	50,500	A.
September.....	737	524	574	34,200	A.

^c Discharge for November, 1908, estimated. There may also have been a small amount of flow during December, 1908.

Monthly discharge of Sunnyside canal near Parker—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1912-13.					
October.....	529	432	472	29,000	B.
March 24-31.....	414	50	179	2,840	B.
April.....	875	431	673	40,000	B.
May.....	914	850	892	54,800	B.
June.....	850	819	838	49,900	B.
July.....	894	819	867	53,300	B.
August.....	910	862	886	54,500	B.
September.....	856	580	694	41,300	B.
1913-14.					
October.....	582	324	434	26,700	B.
November 1-28.....	93	31	46.0	2,550	B.
March 15-31.....	270	0	209	6,630	B.
April.....	802	375	623	37,100	B.
May.....	890	799	860	52,900	B.
June.....	921	796	864	51,400	B.
July.....	967	880	925	56,900	B.
August.....	988	186	894	55,000	B.
September.....	796	508	631	37,500	B.
1914-15.					
October.....	502	82	357	22,000	A.
November 1-6.....	109	88	91.5	1,090	B.
March 10-31.....	452	81	260	11,300	A.
April.....	921	454	671	39,900	A.
May.....	956	770	852	52,400	A.
June.....	998	767	891	53,000	A.
July.....	1,030	806	913	56,100	A.
August.....	859	59	473	29,100	B.
September.....	421	121	248	14,800	B.
1915-16.					
October.....	540	217	442	27,200	A.
March.....	253	0	122	7,500	A.
April.....	890	253	589	35,000	A.
May.....	977	893	928	57,100	A.
June.....	1,030	893	959	57,100	A.
July.....	1,030	900	960	59,000	A.
August.....	1,160	998	1,060	65,200	A.
September.....	1,040	643	807	48,000	A.
1916-17.					
October.....	637	301	451	27,700	A.
March 22-31.....	363	301	315	6,250	A.
April.....	815	344	534	31,800	A.
May.....	1,080	829	982	60,400	A.
June.....	1,190	970	1,040	61,900	A.
July.....	1,270	1,160	1,210	74,400	A.
August.....	1,220	1,080	1,180	72,600	A.
September.....	1,060	677	831	49,400	A.
1917-18.					
October.....	693	375	562	34,600	A.
November 1-8.....	200	0	25.0	397	A.
March 21-31.....	335	188	262	5,720	A.
April.....	1,120	356	749	44,600	A.
May.....	1,200	1,110	1,160	71,300	A.
June.....	1,200	1,120	1,140	67,800	A.
July.....	1,240	1,130	1,190	73,200	A.
August.....	1,200	1,090	1,160	71,300	A.
September.....	1,090	752	946	56,300	A.
1918-19.					
October 1-25.....	772	481	619	30,700	A.
March 14-31.....	344	123	197	7,030	A.
April.....	1,120	358	784	46,700	A.
May.....	1,210	1,130	1,170	71,900	A.
June.....	1,230	1,100	1,160	69,000	A.
July.....	1,260	1,210	1,240	76,200	A.
August.....	1,260	1,150	1,220	75,000	A.
September.....	1,160	588	839	49,500	A.

NOTE.—Maximum discharge during period of record, 1,270 second-feet July 21, 1917. No flow reported during nonirrigating season.

TOPPENISH CREEK NEAR FORT SIMCOE (144).

In sec. 26, T. 10 N., R. 16 E., at Olney ranch, 1½ miles below highway bridge, 3½ miles southeast of Fort Simcoe, and 5 miles southwest of White Swan, in Yakima County. Chain and staff gages used prior to August 19, 1915; water-stage recorder used thereafter.

A small irrigation ditch diverts water above the station.

Drainage area, 124 square miles; measured on Plate I, Water-Supply Paper 369.

Monthly discharge of Toppenish Creek near Fort Simcoe.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- raey.
	Maximum.	Minimum.	Mean.		
1909.					
March.....	376	88	195	12,000	A.
April.....	435	249	363	21,600	A.
May.....	500	121	263	16,200	A.
June.....	140	26	63.8	3,800	A.
July.....	34	12	21.5	1,320	B.
August.....	15	12	13.7	842	B.
September.....	41	14	21.0	1,250	B.
The period.....				57,000	
1909-10.					
October.....	36	15	22.1	1,360	B.
November.....	683	19	199	11,800	A.
December.....	411	144	197	12,100	A.
January.....	364	67	183	11,300	C.
February.....	334	124	155	8,660	C.
March.....	1,190	306	771	47,400	C.
April.....	456	211	369	22,000	C.
May.....	204	56	108	6,640	C.
June.....	42	30	36.2	2,150	C.
July.....	30	23	24.9	1,530	C.
August.....	24	13	15.2	935	C.
September.....	24	13	17.2	1,030	C.
The year.....	1,190	13	175	127,000	
1910-11.					
October.....	27	22	24.0	1,480	C.
November.....	79	26	39.5	2,350	C.
December.....	100	40	58.5	3,600	B.
January.....	57	32	41.1	2,530	B.
February.....	50	26	39.1	2,170	B.
March.....	450	25	196	12,100	B.
April.....	394	144	225	13,400	B.
May.....	320	140	216	13,300	B.
June.....	209	39	80.2	4,770	B.
July.....	38	16	22.2	1,360	B.
August.....	18	13	15.5	953	B.
September.....	44	13	17.4	1,040	B.
The year.....	450	13	81.5	59,100	
1911-12.					
October.....	18	14	16.4	1,010	C.
November.....	25	17	21.1	1,260	B.
December.....	25	21	23.3	1,430	B.
January.....	281	17	86.8	5,340	B.
February.....	188	62	102	5,870	B.
March.....	158	44	61.4	3,780	B.
April.....	378	178	245	14,600	B.
May.....	320	71	184	11,300	B.
June.....	64	16	33.6	2,000	D.
July.....	29	12	17.6	1,080	D.
August.....	16	11	13.3	818	D.
September.....	16	12	13.1	780	C.
The year.....	378	11	67.8	49,300	

Monthly discharge of Toppenish Creek near Fort Simcoe—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1912-13.					
October.....	22.5	12.4	16.6	1,020	C.
November.....	89.0	18.8	40.7	2,420	C.
December.....	244	30.2	61.8	3,800	C.
January.....	334	46.8	86.0	5,290	C.
February.....	268	45.8	98.0	5,440	C.
March.....	114	66.0	92.0	5,660	C.
April.....	530	96.0	327	19,500	C.
May.....	498	171	315	19,400	C.
June.....	150	32.0	65.2	3,880	C.
July.....	26.8	17.0	21.0	1,290	B.
August.....	16.4	14.0	14.9	916	B.
September.....	28.0	14.0	18.3	1,090	B.
The year.....	530	12.4	96.2	69,700	
1913-14.					
October.....	23	17.6	20.9	1,290	B.
November.....	36	23	26.0	1,560	B.
December.....	35	26	28.2	1,730	B.
January.....	1,000	29	259	15,000	B.
February.....	260	121	152	8,440	B.
March.....	510	222	335	20,600	B.
April.....	770	204	462	27,500	C.
May.....	459	124	271	16,700	B.
June.....	124	48	82.4	4,900	B.
July.....	43	16.5	29.0	1,780	B.
August.....	16.5	10.8	13.2	812	C.
September.....	27	10.9	17.2	1,020	C.
The year.....	1,000	10.8	141	102,000	
1914-15.					
October.....	45	21.7	28.0	1,720	C.
November.....	59	32	39.1	2,330	C.
December.....	46	23	31.6	1,940	C.
January.....	33	3.5	12.8	787	C.
February.....	131	27	70.2	3,900	C.
March.....	336	86	185	11,400	C.
April.....			180	10,700	D.
May.....	83	51	68.2	4,190	C.
June.....	49	28	34.2	2,040	C.
July.....	25	8	12.8	787	C.
August.....	13	5.9	7.95	489	B.
September.....	10.7	6.7	8.64	514	A.
The year.....	336	3.5	56.4	40,800	
1915-16.					
October.....	24	10.0	15.5	953	A.
November.....	34	19.7	24.7	1,470	A.
December.....	804		108	6,640	C.
January.....	367		82.8	5,090	C.
February.....	734		243	14,000	C.
March.....	1,120	133	528	32,500	C.
April.....	1,070	424	743	44,200	C.
May.....	1,570	235	528	32,500	C.
June.....	308	126	172	10,200	C.
July.....	136	35	77.7	4,780	C.
August.....	35	20	26.7	1,640	A.
September.....	23	17.4	19.8	1,180	A.
The year.....	1,570	10.0	214	155,000	
1916-17.					
October.....	34	17.5	23.3	1,430	A.
November.....	40	27	30.7	1,830	A.
December.....	38	26	29.8	1,830	A.
January.....	46		35.4	2,180	B.
February.....	39		33.7	1,870	B.
March.....	140	31	42.3	2,600	A.
April.....	317	64	161	9,580	A.
May.....	561	221	353	21,700	A.
June.....	279	42	106	6,310	A.
July.....	39	18.7	24.5	1,510	A.
August.....	18.7	13.7	15.4	947	A.
September.....	20	14.2	15.9	946	A.
The year.....	561	13.7	72.9	52,700	

Monthly discharge of Toppenish Creek near Fort Simcoe—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1917-18.					
October.....	17.1	14.0	14.7	904	A.
November.....	30	17.8	21.0	1,250	A.
December.....	703	23	157	9,650	A.
January.....	289	.....	122	7,500	A.
February.....	.....	.....	125	6,940	C.
March.....	270	58	132	8,120	A.
April.....	256	.....	164	9,760	A.
May.....	160	55	109	6,700	A.
June.....	54	21	32.1	1,910	A.
July.....	21	13.0	16.6	1,020	A.
August.....	14.5	11.0	12.9	793	A.
September.....	17.8	11.0	12.8	762	A.
The year.....	703	11.0	76.5	55,300	
1918-19.					
October.....	29	12.5	16.4	1,010	B.
November.....	30	17.8	20.8	1,240	B.
December.....	34	19.2	23.5	1,440	B.
January.....	1,310	17.1	184	11,300	B.
February.....	100	38	57.9	3,220	A.
March.....	314	33	92.9	5,710	A.
April.....	465	195	307	18,300	A.
May.....	323	55	143	8,790	A.
June.....	50	18.0	26.7	1,590	A.
July.....	17.8	13.4	15.0	922	A.
August.....	14.4	12.1	12.7	781	A.
September.....	16.2	12.9	14.0	833	A.
The year.....	1,310	12.1	76.2	55,100	

NOTE.—Maximum discharge during period of record, 1,650 second-feet at noon May 4, 1916; minimum discharge, 3.5 second-feet Jan. 17, 1915.

Yearly discharge of Toppenish Creek near Fort Simcoe.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1910.....	1,190	13	15.2	Aug.....	175	127,000
1911.....	450	13	15.5	Aug.....	81.5	59,100
1912.....	378	11	13.1	Sept.....	67.8	49,300
1913.....	530	12.4	14.9	Aug.....	96.2	69,700
1914.....	1,000	10.8	13.2	Aug.....	141	102,000
1915.....	336	3.5	7.95	Aug.....	56.4	40,800
1916.....	1,570	10.0	15.5	Oct.....	214	155,000
1917.....	561	13.7	15.4	Aug.....	72.9	52,700
1918.....	703	11.0	12.8	Sept.....	76.5	55,300
1919.....	1,310	12.1	12.7	Aug.....	76.2	55,100
The period.....	1,570	3.5	7.95	Aug., 1915.	106	76,600

TOPPENISH CREEK NEAR WHITE SWAN (145).

Chain gage 1,000 feet below mouth of Simcoe Creek and 5 miles southeast of White Swan, in Yakima County.

Drainage area, 360 square miles (revised); measured on Plate I, Water-Supply Paper 369.

Monthly discharge of Toppenish Creek near White Swan.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1909.					
March 10-31.....	363	147	242	10,600	B.
April.....	433	264	332	19,800	C.
May.....	433	137	248	15,200	C.
August.....	40	26	30.1	1,850	D.
September.....	28	26	26.1	1,550	D.
1910.					
January 22-31.....	833	164	570	11,300	C.
February.....	647	188	287	15,900	B.
March.....	1,440	523	907	55,800	B.
April.....	523	320	462	27,500	B.
May.....	302	81	170	10,500	B.
June.....	76	51	61.5	3,660	B.
July.....	56	36	46.3	2,850	B.
August.....	41	11	18.7	1,150	B.
September.....	11	11	11.0	655	B.
The period.....				129,000	
1910-11.					
October.....	11	11	11.0	676	B.
November.....	16	11	12.2	726	B.
December.....	36	18	26.2	1,610	B.
January.....	32	26	28.3	1,740	B.
February.....	44	36	41.6	2,310	A.
March.....	329	46	133	8,180	A.
April.....	392	170	247	14,700	B.
May.....	315	189	238	14,600	B.
June.....	245	58	113	6,720	A.
July.....	54	18	29.2	1,800	B.
August.....	18	11	14.1	867	B.
September.....	14	11	11.6	690	B.
The year.....	392	11	75.9	54,600	

TOPPENISH CREEK AT ALFALFA (146).

Staff gage at highway bridge 300 feet above Northern Pacific Railway crossing, 1 mile southeast of Alfalfa and 2½ miles above mouth of creek, in Yakima County.

A considerable amount of water is diverted above the station for irrigation.

Monthly discharge of Toppenish Creek at Alfalfa.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1909.					
March 6-31.....	496	300	357	18,400	A.
April.....	536	406	459	27,300	A.
May.....	766	296	387	23,800	A.
June.....	370	173	287	17,100	A.
July.....	200	128	160	9,840	A.
August.....	200	110	153	9,410	A.
September.....	128	77	92.6	5,510	A.
The period.....				111,000	
1909-10.					
October.....	149	77	125	7,690	A.
November.....	766	95	300	17,900	A.
December.....	720	262	451	27,700	A.
January.....	1,300	139	446	27,400	B.
February.....	723	380	513	28,500	B.
March.....	1,600	678	1,130	69,500	B.
April.....	769	380	537	32,000	B.
May.....	501	184	298	18,300	B.
June.....	184	72	115	6,840	B.
July.....	72	46	56.9	3,500	B.
August.....	72	28	46.4	2,850	B.
September.....	86	46	66.5	3,960	B.
The year.....	1,600	28	340	246,000	

Monthly discharge of Toppenish Creek at Alfalfa—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1910-11.					
October.....	86	72	82.8	5,090	B.
November.....	304	72	144	8,570	B.
December.....	270	184	214	13,200	B.
January.....	210	160	182	11,200	B.
February.....	210	184	193	10,700	B.
March.....	340	184	215	13,200	B.
April.....	340	184	297	17,700	B.
May.....	460	270	325	20,000	B.
June.....	344	162	249	14,800	B.
July.....	162	94	113	6,950	B.
August.....	94	69	82.0	5,040	B.
September.....	108	.....	92.2	5,490	D.
The year.....	460	.....	182	132,000	
1911-12.					
October.....	185	.....	159	9,780	C.
November.....	211	162	176	10,500	B.
December.....	185	142	165	10,100	B.
January.....	306	141	199	12,200	B.
February.....	407	226	297	17,100	B.
March.....	324	110	209	12,900	B.
April.....	451	265	354	21,100	B.
May.....	495	344	413	25,400	B.
June.....	470	212	278	16,500	B.
July.....	226	181	205	12,600	B.
August.....	191	167	177	10,900	B.
September.....	266	191	229	13,600	B.
The year.....	495	.....	238	173,000	

SIMCOE CREEK NEAR FORT SIMCOE (147).

In sec. 34, T. 11 N., R. 16 E., at site of a proposed reservoir, 4 miles northeast of Fort Simcoe, in Yakima County. Chain and staff gages just above Spring Creek used prior to November 20, 1915; water-stage recorder just below Spring Creek used thereafter.

Water is diverted above the station for irrigation.

Drainage area, 77 square miles; measured on Plate I, Water-Supply Paper 369.

Monthly discharge of Simcoe Creek near Fort Simcoe.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1909.					
March.....	95	35	61.9	3,810	A.
April.....	87	49	63.5	3,780	A.
May.....	95	35	58.9	3,620	A.
June.....	28	3	12.6	750	C.
July.....	3	.1	1.59	98	C.
August.....	.1	.1	.10	6	D.
September.....	.1	.0	.04	2	D.
The period.....	.....	.....	.....	12,100	
1909-10.					
October.....	.7	.0	.47	29	D.
November.....	87	.7	21.9	1,300	C.
December.....	79	28	36.0	2,210	B.
January.....	957	13	132	8,120	C.
February.....	144	25	60	3,330	B.
March.....	1,340	114	382	23,500	C.
April.....	129	89	108	6,430	B.
May.....	89	17	46.6	2,870	B.
June.....	13	4	7.9	470	B.
July.....	8	4	4.5	277	B.
August.....	4	.2	.74	46	B.
September.....	.2	.2	.20	12	B.
The year.....	1,340	.0	67.1	48,600	

Monthly discharge of Simcoe Creek near Fort Simcoe—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1910-11.					
October.....	4	0.2	2.3	141	B.
November.....	8	4	7.1	422	B.
December.....	13	8	10.4	640	B.
January.....	4	4	4.0	246	B.
February.....	7	4	6.9	383	B.
March.....	63	7	26.8	1,650	A.
April.....	63	28	43.3	2,580	A.
May.....	53	36	44.2	2,720	A.
June.....	86	7	28.2	1,680	B.
July.....	7	2	3.3	203	B.
August.....	2	1	1.6	98.4	C.
September.....	1	1	1.0	59.5	C.
The year.....	86	.2	14.9	10,800	
1911-12.					
October.....	2	1	1.1	67.6	C.
November.....	2	2	2.0	119	C.
December.....	2	2	2.0	123	C.
January.....	99	2	33.4	2,050	D.
February.....	142	36	72.3	4,160	C.
March.....	66	24	36.1	2,220	C.
April.....	87	66	81.0	4,820	C.
May.....	99	13	63.9	3,930	C.
June.....	13	2	6.3	375	D.
July.....	2	2	2.0	123	D.
August.....	2	1	1.9	117	D.
September.....	1	1	1.0	59.5	D.
The year.....	142	1	25.0	18,200	
1912-13.					
October.....	3	1	1.90	117	D.
November.....	4	3	3.20	190	D.
December.....	32	3	4.61	283	D.
January.....	24	13	16.8	1,030	B.
February.....	85	14	33.3	1,850	B.
March.....	25	14	21.5	1,320	B.
April.....	156	23	108	6,430	B.
May.....	110	74	96.1	5,910	B.
June.....	52	6	14.6	869	B.
July.....	5	1	3.61	222	C.
August.....	2	1	1.87	115	D.
September.....	6	.3	1.44	85.7	D.
The year.....	156	.3	25.4	18,400	
1913-14.					
October.....	18	3	6.81	419	D.
November.....	8	3	4.53	270	D.
December.....	7	4	4.74	291	D.
January.....	462	5	133	8,180	C.
February.....	252	2	94.7	5,260	B.
March.....	274	40	114	7,010	B.
April.....	232	50	129	7,680	B.
May.....	97	3	33.3	2,050	C.
June.....	6	2	3.70	220	D.
July.....	1.1	.3	.51	31.4	D.
August.....	.8	.1	.56	34.4	D.
September.....	1.2	.3	.82	48.8	D.
The year.....	462	.1	43.4	31,500	
1914-15.					
October.....	4.2	.4	1.64	101	
November.....	20	2.4	6.07	361	D.
December.....	9.0	2.4	3.75	231	D.
January.....	8.4	4.2	4.75	292	D.
February.....	188	7.4	53.2	2,950	C.
March.....	192	53	85.5	5,260	C.
April.....	148	58	81.8	4,870	C.
May.....	45	11.5	22.4	1,380	C.
June.....	16	2.7	7.20	428	C.
July.....	3.8	.9	2.22	136	D.
August.....	.8	.4	.52	32	D.
September.....	.5	.4	.40	24	D.
The year.....	192	.4	22.2	16,100	

Monthly discharge of Simcoe Creek near Fort Simcoe—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	0.6	0.5	0.54	33	C.
November.....	2.9	.3	.96	57	C.
December.....	293	2.3	29.7	1,830	B.
January.....			16.7	1,030	B.
February.....	598	19	157	9,030	C.
March.....	435	65	231	14,200	C.
April.....	222	64	145	8,630	B.
May.....	254	52	97.5	6,000	A.
June.....	62	24	41.2	2,450	A.
July.....	26	8.3	14.7	904	A.
August.....	7.8	3.4	4.69	288	B.
September.....	4.3	1.7	2.60	155	B.
The year.....	598	.5	61.4	44,600	
1916-17.					
October.....	2.6	1.7	2.14	132	B.
November.....	4.8	2.3	3.78	225	B.
December.....	7.5		5.68	349	B.
January.....	8.8		7.10	437	B.
February.....	7.5	6.6	7.38	410	A.
March.....	11	7.5	8.57	527	A.
April.....	35	7.5	18.4	1,090	A.
May.....	121	28	61.9	3,810	A.
June.....	75	7.0	24.0	1,430	A.
July.....	6.6	2.9	4.50	277	B.
August.....	2.9	.7	1.63	100	B.
September.....	1.0	.3	.55	33	B.
The year.....	121	.3	12.2	8,820	
1917-18.					
October.....	.3	.2	.25	15	A.
November.....	2.2	.3	.58	35	A.
December.....	286	2.5	79.1	4,860	A.
January.....	232	25	80.7	4,960	C.
February.....	102	29	48.8	2,710	A.
March.....	66	29	40.2	2,470	A.
April.....	70	31	46.5	2,770	A.
May.....	33	13.4	25.1	1,540	A.
June.....	13.4	4.8	8.19	487	A.
July.....	4.4	2.2	3.15	194	A.
August.....	1.9	.3	1.04	64	A.
September.....	.4	.2	.27	16	A.
The year.....	286	.2	27.8	20,100	
1918-19.					
October.....		.2	.35	22	C.
November.....			1.36	80.9	B.
December.....	4.0		3.02	186	B.
January.....	319		47.8	2,940	B.
February.....	47	25	35.4	1,970	A.
March.....	88	32	50.6	3,110	A.
April.....	106	45	64.6	3,840	A.
May.....	68	13.4	31.0	1,910	A.
June.....	12.3	5.0	7.84	467	A.
July.....	5.0	2.4	3.43	211	A.
August.....	2.2	.6	1.25	76.9	B.
September.....	1.0	.3	.50	30	B.
The year.....	319	.2	20.5	14,800	

NOTE.—Maximum discharge during period of record, 1,340 second-feet Mar. 2, 1910. No flow Sept. 13 to Oct. 10, 1909.

Yearly discharge of Simcoe Creek near Fort Simcoe.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1910.....	1,340	0.0	0.2	Sept.....	67.1	48,600
1911.....	86	.2	1.0	Sept.....	14.9	10,800
1912.....	142	1	1.0	Sept.....	25.0	18,200
1913.....	156	.3	1.44	Sept.....	25.4	18,400
1914.....	462	.1	.51	July.....	43.4	31,500
1915.....	192	.4	.403	Sept.....	22.2	16,100
1916.....	598	.5	.545	Oct.....	61.4	44,600
1917.....	121	.3	.55	Sept.....	12.2	8,820
1918.....	286	.2	.25	Oct.....	27.8	20,100
1919.....	319	.2	.35	Oct.....	20.5	14,800
The period.....	1,340	.0	.2	Sept., 1910	32.0	23,200

RESERVATION DRAIN AT ALFALFA (148).

Staff gage at highway bridge a quarter of a mile southeast of Alfalfa and 2 miles above mouth of drain, in Yakima County.

Reservation drain carries the return water from irrigation by the reservation canals and the underflow of Toppenish Valley. During the low-water period practically the whole flow of Toppenish Creek is carried into this channel by seepage.

Monthly discharge of Reservation drain at Alfalfa.

Month.	Discharge in second-feet.			Run-off in acre feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1912-13.					
December 5-31.....	198	184	190	10,200	A.
January.....	198	190	193	11,900	A.
February.....	207	190	200	11,100	A.
March.....	207	184	194	11,900	A.
April.....	234	155	190	11,300	B.
May.....	264	177	212	13,000	A.
June.....	234	186	206	12,300	A.
July.....	210	159	182	11,200	A.
August.....	186	159	174	10,700	A.
September.....	210	173	188	11,200	A.
The period.....				115,000	
1913-14.					
October.....	244	199	234	14,400	B.
November.....	244	191	215	12,800	B.
December.....	195	188	192	11,800	B.
January.....	214	190	210	12,900	B.
February.....	230	214	228	12,700	B.
March.....	230	186	215	13,200	B.
April.....	214	177	199	11,800	A.
May.....	250	204	220	13,500	A.
June.....	223	199	207	12,300	A.
July.....	203	179	196	12,100	A.
August.....	187	164	175	10,800	A.
September.....	223	183	207	12,300	A.
The year.....	250	164	208	151,000	

Monthly discharge of Reservation drain at Alfalfa—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1914-15.					
October.....	254	213	229	14,100	B.
November.....	213	203	206	12,300	B.
December.....	210	183	198	12,200	B.
January.....	203	178	187	11,500	B.
February.....	211	189	200	11,100	B.
March.....	211	178	193	11,900	B.
April.....	189	167	179	10,700	A.
May.....	189	167	178	10,900	A.
June.....	189	156	170	10,100	A.
July.....	178	145	161	9,900	A.
August.....	167	145	151	9,280	A.
September.....	167	145	151	8,980	A.
The year.....	254	145	184	133,000	
1915-16.					
October.....	182	156	178	10,900	A.
November.....	186	178	183	10,900	A.
December.....	189	177	184	11,300	A.
January.....	189	167	178	10,900	A.
February.....		178	346	19,900	C.
May.....	548	308	405	24,900	A.
June.....	348	308	339	20,200	A.
July.....	388	230	293	18,000	A.
August.....	249	220	232	14,300	A.
September.....	288	230	259	15,400	A.
1916-17.					
October.....	249	202	221	13,600	A.
November.....	211	193	199	11,800	A.
December.....	211	193	200	12,300	A.
January.....	211	184	194	11,900	A.
February.....	193	184	188	10,400	A.
March.....	184	166	177	10,900	A.
April.....	230	166	183	10,900	A.
May.....	389	220	285	17,500	C.
June.....	367	299	334	19,900	A.
July.....	299	255	286	17,600	A.
August.....	277	234	268	16,500	A.
September.....	344	255	304	18,100	A.
The year.....	389	166	237	171,000	
1917-18.					
October.....	266	214	246	15,100	A.
November.....	277	255	268	15,900	A.
December.....	1,000	277	344	21,200	A.
January.....	1,500	299	450	27,700	B.
February.....	322	266	286	15,900	A.
March.....	255	224	240	14,800	A.
April.....	277	214	247	14,700	A.
May.....	299	224	262	16,100	A.
June.....	344	266	312	18,600	A.
July.....	322	255	278	17,100	A.
August.....	367	266	312	19,200	A.
September.....	367	299	319	19,000	A.
The year.....	1,500	214	297	215,000	
1918-19.					
October.....	322	255	288	17,700	A.
November.....	322	204	243	14,500	A.
December.....	204	194	203	12,500	A.
January.....	434	175	231	14,200	A.
February.....	344	244	281	15,600	A.
March.....	244	184	218	13,400	A.
April.....	299	224	268	15,900	A.
May.....	389	244	296	18,200	A.
June.....	434	389	407	24,200	A.
July.....	389	299	360	22,100	A.
August.....	412	299	346	21,300	A.
September.....	457	322	407	24,200	A.
The year.....	457	175	295	214,000	

NOTE.—Maximum discharge during period of record, 1,500 second-feet Jan. 2, 1918; minimum discharge, 145 second-feet July 3, Aug. 12, 15-31, Sept. 1-14, 1915.

Yearly discharge of Reservation drain at Alfalfa.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1914.....	250	164	175	Aug.....	208	151,000
1915.....	254	145	151	Aug., Sept.	184	133,000
1917.....	389	166	177	Mar.....	237	171,000
1918.....	1,500	214	240	Mar.....	297	215,000
1919.....	457	175	203	Dec.....	295	214,000
The period.....	1,500	145	151	Aug. and Sept., 1915	244	177,000

SATUS CREEK NEAR TOPPENISH (149).

Prior to July 1, 1913, in sec. 26, T. 9 N., R. 19 E., 1 mile above Dry Creek and 6 miles below Logy Creek; beginning June 13, 1913, in sec. 24, at dam site 1 mile below Dry Creek and 9 miles southwest of Toppenish, in Yakima County. Staff gages used prior to September 20, 1913; water-stage recorder used thereafter.

Entire flow of Status Creek above Lazy Creek is diverted for irrigation during July and August. Records for low-water summer months show the run-off of Lazy and Dry creeks (since June, 1913) and the seepage return from upper Satus Creek.

Drainage area, 254 square miles (revised), for station above Dry Creek; 427 square miles (revised), for station below Dry Creek; measured on topographic map and Plate I, Water-Supply Paper 369.

Monthly discharge of Satus Creek near Toppenish.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1908-9.					
November 6-30.....	41	28	34.0	1,690	D.
December.....	41	32	36.4	2,240	D.
January.....	500	41	138	8,480	D.
February.....	538	67	173	9,610	D.
March.....	190	142	168	10,300	D.
April.....	190	142	170	10,100	D.
May.....	190	142	155	9,530	D.
June.....	142	52	110	6,550	D.
July.....	52	30	36.0	2,210	D.
August.....	30	15	21.9	1,350	D.
September.....	22	15	16.6	988	D.
The period.....				63,000	
1909-10.					
October.....	40	22	29.0	1,780	D.
November.....	386	40	146	8,690	D.
December.....	312	190	222	13,600	D.
January.....	1,970	49	390	24,000	D.
February.....	840	141	237	13,200	C.
March.....	2,360	277	578	35,500	D.
April.....	246	216	229	13,600	D.
May.....	246	119	165	10,100	C.
June.....	98	49	64.9	3,860	C.
July.....	36	25	29.6	1,820	C.
August.....	25	11	16.2	996	C.
September.....	25	16	21.2	1,260	C.
The year.....	2,360	11	177	128,000	

Monthly discharge of Satus Creek near Toppenish—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1910-11.					
October.....	36	25	30.5	1,880	C.
November.....	119	36	59.6	3,550	C.
December.....	190	80	125	7,690	C.
January.....	141	49	73.9	4,540	C.
February.....	98	49	73.4	4,080	C.
March.....	400	56	196	12,100	D.
April.....	350	92	175	10,400	D.
May.....	200	115	158	9,720	C.
June.....	140	35	88.2	5,250	C.
July.....	32	10	18.9	1,160	C.
August.....	29	7	18.8	1,160	C.
September.....	21	9	18.6	1,110	C.
The year.....	400	7	86.4	62,600	
1911-12.					
October.....	29	15	21.5	1,320	C.
November.....	40	29	31.6	1,880	C.
December.....	40	29	32.4	1,990	C.
January.....	355	20	165	10,100	C.
February.....	520	128	244	14,000	C.
March.....	169	97	123	7,320	C.
April.....	380	169	218	12,500	C.
May.....	300	169	217	13,300	C.
June.....	173	59	112	6,660	C.
July.....	56	22	32.7	2,010	C.
August.....	22	16	18.5	1,140	C.
September.....	22	16	18.2	1,080	C.
The year.....	520	15	102	73,300	
1912-13.					
October.....	30	17	21.9	1,350	C.
November.....	200	26	67.2	4,000	C.
December.....	300	44	61.5	3,780	C.
January.....	415	175	266	16,400	D.
February.....	630	129	228	12,700	D.
March.....	177	96	134	8,240	C.
April.....	295	180	236	14,000	C.
May.....	275	155	211	13,000	C.
June.....	285	87	176	10,500	D.
July.....	69	22	36.9	2,270	D.
August.....	22	13	15.8	972	D.
September.....	22	13	14.8	881	D.
The year.....	630	13	122	88,100	
1913-14.					
October.....	23.5	15.0	19.1	1,170	A.
November.....	39.2	23.5	28.2	1,680	B.
December.....	37.6	29.4	31.6	1,940	A.
January.....	84.4	35.2	300	18,400	B.
February.....	818	90.0	226	12,600	A.
March.....	882	204	448	27,500	A.
April.....	472	182	264	15,700	B.
May.....	220	102	168	10,300	A.
June.....	98	28.5	57.7	3,430	A.
July.....	27.7	12.3	18.4	1,130	B.
August.....	11.8	8.0	9.51	585	B.
September.....	14.0	9.4	11.4	678	B.
The year.....	882	8.0	131	95,100	
1914-15.					
October.....	35	13	20.9	1,290	C.
November.....	46	25	32.1	1,910	A.
December.....	31	15	26.5	1,630	A.
January.....	36	26	31.0	1,910	A.
February.....	412	34	113	6,280	C.
March.....	748	226	342	21,000	B.
April.....	373	130	212	12,600	A.
May.....	124	59	94.9	5,840	A.
June.....	55	17	31.2	1,860	A.
July.....	16	10	13.4*	824	B.
August.....	12	7.2	8.35	513	B.
September.....	12	8.2	9.99	594	B.
The year.....	748	7.2	77.7	56,300	

Monthly discharge of Satus Creek near Toppenish—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	15	10	12.8	787	C.
November.....	44	16	24.0	1,430	A.
December.....	3,230	30	373	22,900	C.
January.....		71	218	13,400	C.
February.....	1,890		714	41,100	C.
March.....	1,860	298	780	48,000	C.
April.....	735	307	482	28,700	B.
May.....	439	216	284	17,500	A.
June.....	312	174	249	14,800	A.
July.....	229	57	119	7,320	A.
August.....	54	23	34.4	2,120	A.
September.....	29	21	24.2	1,440	A.
The year.....	3,230	10	275	199,000	
1916-17.					
October.....	39	24	30.5	1,880	A.
November.....	52	22	35.0	2,080	A.
December.....	48	28	40.1	2,470	A.
January.....	118		51.5	3,170	B.
February.....	92	31	61.1	3,390	A.
March.....	463	36	77.6	4,770	A.
April.....	552	150	360	21,400	B.
May.....		224	293	18,000	B.
June.....	301	98	193	11,500	A.
July.....	89	22	44.7	2,750	A.
August.....	22	12	15.0	922	B.
September.....	16	12	13.8	821	B.
The year.....	552	12	101	73,200	
1917-18.					
October.....	20	13	15.7	965	B.
November.....	30	21	24.6	1,460	A.
December.....	1,130	26	338	20,800	B.
January.....			315	19,400	C.
February.....			263	14,600	D.
March.....	495	128	252	15,500	A.
April.....	268	133	169	10,100	A.
May.....	162	73	122	7,500	A.
June.....	71	22	40.5	2,410	A.
July.....	26	12	16.6	1,020	A.
August.....			13.7	842	B.
September.....	22		14.9	887	B.
The year.....	1,130		132	95,500	
1918-19.					
October.....	27		18.3	1,130	B.
November.....	48	23	32.6	1,940	A.
December.....		28	49.5	3,040	B.
January.....	1,800		360	22,100	B.
February.....	256		192	10,700	B.
March.....	494	152	309	19,000	A.
April.....	530	247	362	21,500	A.
May.....			208	12,800	B.
June.....	136	38	77.4	4,610	A.
July.....	36	15	21.5	1,320	A.
August.....	18	11	13.4	824	A.
September.....	23	13	18.3	1,090	A.
The year.....	1,800	11	138	100,000	

NOTE.—Maximum discharge during period of record, 3,870 second-feet Dec. 22, 1915; minimum discharge 6.6 second-feet at 10 p. m. Aug. 28 and 4 a. m. Aug. 30, 1915.

Yearly discharge of Satus Creek near Toppenish.

Year ending September 30.	Discharge in second-feet.				Annual mean.	Annual run-off in acre-feet.	
	Maximum day.	Minimum.		Calendar month.			
		Day.	Calendar month.				
			Mean.				Month.
1910.....	2,360	11	16.2	Aug.....	177	128,000	
1911.....	400	7	18.6	Sept.....	86.4	62,600	
1912.....	520	15	18.2	Sept.....	102	73,300	
1913.....	630	13	14.8	Sept.....	122	88,100	
1914.....	882	8.0	9.51	Aug.....	131	95,100	
1915.....	748	7.2	8.35	Aug.....	77.7	56,300	
1916.....	3,230	10	12.8	Oct.....	275	199,000	
1917.....	552	12	13.8	Sept.....	101	73,200	
1918.....	1,130	.....	13.7	Aug.....	132	95,500
1919.....	1,800	11	13.4	Aug.....	138	100,000	
The period.....	3,230	7	8.35	Aug., 1915	134	97,100	

Snake River Basin.

Snake River at Riparia (150).

Staff and chain gages at railroad bridge at Riparia, in Whitman County.

A large amount of water is diverted for irrigation. Flow is regulated to some extent by storage for irrigation in Jackson Lake reservoir (capacity, 789,000 acre-feet). Arrow-rock reservoir (capacity, 280,000 acre-feet), Deer Flat reservoir (capacity, 177,000 acre-feet), and in other smaller reservoirs in the basin; also by diversions for irrigation.

Drainage area, 102,000 square miles; authority, United States Weather Bureau.

Monthly discharge of Snake River at Riparia.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	24,000	15,200	20,700	1,270,000	B.
November.....	28,000	21,000	23,900	1,420,000	B.
December.....	38,800	21,000	27,100	1,670,000	B.
January.....	.....	20,200	26,500	1,630,000	C.
February.....	.....	.....	50,500	2,900,000	C.
March.....	144,000	39,800	86,200	5,300,000	A.
April.....	148,000	84,900	109,000	6,490,000	A.
May.....	185,000	103,000	128,000	7,870,000	A.
June.....	230,000	108,000	157,000	9,340,000	A.
July.....	157,000	37,800	92,900	5,710,000	A.
August.....	35,100	20,200	26,400	1,620,000	B.
September.....	24,800	18,900	21,000	1,250,000	B.
The year.....	230,000	15,200	64,100	46,500,000	
1916-17.					
October.....	33,300	18,800	25,400	1,560,000	B.
November.....	29,800	21,200	26,600	1,580,000	B.
December.....	29,800	21,200	25,200	1,550,000	B.
January.....	27,200	19,400	23,000	1,410,000	B.
February.....	28,000	22,600	25,600	1,420,000	B.
March.....	44,600	.....	29,400	1,810,000	B.
April.....	160,000	47,600	97,400	5,800,000	A.
May.....	256,000	111,000	177,000	10,900,000	A.
June.....	250,000	162,000	201,000	12,000,000	A.
July.....	173,000	36,000	93,900	5,770,000	A.
August.....	35,100	17,200	22,200	1,360,000	A.
September.....	28,000	16,200	18,500	1,100,000	A.
The year.....	256,000	16,200	63,800	46,300,000	

Monthly discharge of Snake River at Riparia—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1917-18.					
October.....	28,000	21,900	24,500	1,510,000	A.
November.....	28,000	23,300	25,500	1,520,000	A.
December.....	180,000	23,300	60,800	3,740,000	A.
January.....	131,000	44,600	69,100	4,250,000	A.
February.....	61,000	34,200	43,300	2,400,000	A.
March.....	111,000	35,100	59,300	3,650,000	A.
April.....	114,000	68,500	89,900	5,350,000	A.
May.....	166,000	72,400	110,000	6,760,000	A.
June.....	216,000	83,500	145,000	8,630,000	A.
July.....	86,300	24,000	40,700	2,500,000	A.
August.....	26,500	16,800	19,900	1,220,000	A.
September.....	20,300	15,000	17,400	1,040,000	A.
The year.....	216,000	15,000	58,800	42,600,000	
1918-19.					
October.....	31,000	18,400	25,400	1,560,000	A.
November.....	30,100	20,300	27,000	1,610,000	A.
December.....	25,600	17,300	22,200	1,360,000	A.
January.....	37,000	16,800	24,400	1,500,000	A.
February.....	29,200	23,200	26,000	1,440,000	A.
March.....	79,300	25,100	41,900	2,580,000	A.
April.....	138,000	68,500	96,800	5,760,000	A.
May.....	167,000	71,100	114,000	7,010,000	A.
June.....	129,000	29,000	59,300	3,530,000	A.
July.....	28,200	13,400	18,100	1,110,000	A.
August.....	13,400	10,900	12,000	738,000	A.
September.....	12,600	10,900	11,800	702,000	A.
The year.....	167,000	10,900	40,000	28,900,000	

NOTE.—Maximum discharge during period of record, 256,000 second-feet May 30, 1917; minimum discharge, 10,900 second-feet Aug. 28 to Sept. 5, 1919.

SNAKE RIVER NEAR BURBANK (151).

Staff gage in SW. $\frac{1}{4}$ sec. 28, T. 9 N., R. 31 E., at head of Fivemile Rapids, one-third mile above intake of Burbank Co. canal and $4\frac{1}{2}$ miles northeast of Burbank, in Walla Walla County.

A large amount of water is diverted for irrigation. Flow is regulated to some extent by storage for irrigation in Jackson Lake reservoir (capacity, 789,000 acre-feet), Arrowrock reservoir (capacity, 280,000 acre-feet), Deer Flat reservoir (capacity, 177,000 acre-feet), and in other smaller reservoirs in the basin; also by diversions for irrigation.

Drainage area, 109,000 square miles; measured on maps issued by General Land Office and Forest Service.

Monthly discharge of Snake River near Burbank.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
September.....	29,100	19,300	26,600	1,580,000	B.
1909-10.					
October.....	30,000	25,500	28,100	1,730,000	B.
November.....	116,000	27,200	47,800	2,840,000	A.
December.....	64,500	25,500	40,800	2,510,000	A.
January.....	47,800	29,100	37,500	2,310,000	A.
February.....	76,900	27,200	34,400	1,910,000	A.
March.....	252,000	69,000	165,000	10,100,000	A.
April.....	232,000	108,000	164,000	9,760,000	A.
May.....	213,000	124,000	159,000	9,780,000	A.
June.....	134,000	39,400	78,900	4,690,000	A.
July.....	37,100	17,400	25,200	1,550,000	A.
August.....	17,400	11,800	13,900	855,000	B.
September.....	19,300	13,000	15,400	916,000	B.
The year.....	252,000	11,800	67,600	49,000,000	

Monthly discharge of Snake River near Burbank—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1910-11.					
October.....	31,900	15,600	23,000	1,410,000	A.
November.....	55,900	21,500	35,800	2,130,000	A.
December.....	53,100	26,400	35,400	2,180,000	A.
January.....	34,000	23,000	26,800	1,650,000	A.
February.....	76,900	25,500	37,100	2,060,000	A.
March.....	92,100	21,500	56,800	3,490,000	A.
April.....	107,000	51,700	73,500	4,370,000	A.
May.....	153,000	95,600	124,000	7,620,000	A.
June.....	242,000	118,000	185,000	11,000,000	A.
July.....	138,000	27,200	65,100	4,000,000	A.
August.....	26,400	16,100	20,200	1,240,000	B.
September.....	21,500	15,600	17,400	1,040,000	B.
The year.....	242,000	15,600	58,300	42,200,000	
1911-12.					
October.....	36,100	18,700	26,300	1,620,000	A.
November.....	41,700	23,000	29,400	1,750,000	A.
December.....	30,000	23,800	26,400	1,620,000	A.
January.....	67,500	15,000	35,600	2,190,000	A.
February.....	67,500	36,100	49,900	2,870,000	A.
March.....	67,500	35,000	41,400	2,550,000	A.
April.....	134,000	69,000	100,000	5,950,000	A.
May.....	276,000	110,000	184,000	11,300,000	A.
June.....	289,000	122,000	209,000	12,400,000	B.
July.....	120,000	26,000	59,500	3,660,000	B.
August.....	32,800	17,200	23,700	1,460,000	B.
September.....	33,800	22,000	28,700	1,710,000	B.
The year.....	289,000	15,000	67,600	49,100,000	
1912-13.					
October.....	33,800	26,000	30,100	1,850,000	B.
November.....	43,200	26,000	33,800	2,010,000	B.
December.....	27,800	17,200	23,200	1,430,000	B.
January.....	30,700	18,500	24,400	1,500,000	B.
February.....	45,800	23,500	28,800	1,600,000	B.
March.....	94,500	26,000	44,900	2,760,000	B.
April.....	161,000	86,000	124,000	7,380,000	B.
May.....	^a 298,000	89,400	166,000	10,200,000	B.
June.....	280,000	114,000	189,000	11,200,000	B.
July.....	107,000	31,700	61,400	3,780,000	B.
August.....	40,700	16,100	25,200	1,550,000	B.
September.....	23,500	15,500	19,100	1,140,000	B.
The year.....	^a 298,000	15,500	64,200	46,400,000	
1913-14.					
October.....	35,000	21,500	29,500	1,810,000	A.
November.....	35,000	30,800	32,300	1,920,000	A.
December.....	32,800	20,800	24,800	1,520,000	A.
January.....	42,000	23,000	32,900	2,020,000	B.
February.....	59,400	20,800	33,400	1,850,000	A.
March.....	85,600	44,500	65,100	4,000,000	A.
April.....	127,000	47,100	92,900	5,530,000	A.
May.....	175,000	87,300	130,000	7,990,000	A.
June.....	142,000	59,400	96,700	5,750,000	B.
July.....	59,400	18,000	32,400	1,990,000	B.
August.....	18,600	^b 13,400	14,000	861,000	B.
September.....	23,800	^b 13,000	17,100	1,020,000	B.
The year.....	175,000	^b 13,000	50,100	36,300,000	
1914-15.					
October.....	44,300	21,200	30,700	1,890,000	B.
November.....	43,000	27,700	34,300	2,040,000	B.
December.....	32,100	.....	23,400	1,440,000	B.
January.....	28,500	.....	23,700	1,460,000	C.
February.....	33,000	23,200	28,400	1,580,000	C.
March.....	48,200	26,100	34,700	2,130,000	B.
April.....	71,200	43,000	56,500	3,360,000	A.
May.....	122,000	44,300	74,300	4,570,000	A.
June.....	99,400	39,400	64,400	3,830,000	A.
July.....	41,800	21,200	30,200	1,860,000	A.
August.....	21,900	13,400	16,800	1,030,000	A.
September.....	16,700	13,000	14,400	857,000	B.
The year.....	122,000	13,000	36,000	26,000,000	

^a Maximum discharge revised, but daily and monthly results, as previously published, have not been changed.
^b Minimum discharge revised but daily and monthly results, as previously published, have not been changed.

Monthly discharge of Snake River near Burbank—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....			21,100	1,300,000	C.
November.....			24,200	1,440,000	B.
December.....			27,700	1,700,000	B.
January.....			27,100	1,670,000	B.
February.....			51,500	2,960,000	B.
March.....	159,000	38,300	89,500	5,500,000	B.
April.....			114,000	6,780,000	C.
May.....			133,000	8,180,000	C.
June.....	248,000	99,400	164,000	9,760,000	B.
July.....	170,000		99,000	6,090,000	B.
August.....			28,400	1,750,000	C.
September.....			22,800	1,360,000	C.
The year.....	248,000		66,800	48,500,000	
1916-17.					
October.....	36,200		28,000	1,720,000	B.
November.....			28,200	1,680,000	C.
December.....			26,800	1,650,000	B.
January.....	32,300	17,600	25,500	1,570,000	B.
February.....	37,100	24,400	28,500	1,580,000	B.
March.....	47,800	27,300	31,700	1,950,000	B.
The period.....				10,200,000	

Yearly discharge of Snake River near Burbank.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1910.....	252,000	11,800	13,900	Aug.....	67,600	49,000,000
1911.....	242,000	15,600	17,400	Sept.....	58,300	42,200,000
1912.....	289,000	15,000	23,700	Aug.....	67,600	49,100,000
1913.....	298,000	15,500	19,100	Sept.....	64,200	46,400,000
1914.....	175,000	13,000	14,000	Aug.....	50,100	36,300,000
1915.....	122,000	13,000	14,400	Sept.....	36,000	26,000,000
1916.....	248,000		21,100	Oct.....	66,800	48,500,000
The period.....	298,000	11,800	13,900	Aug., 1910.	58,700	42,500,000

GRANDE RONDE RIVER AT ZINDEL (152).

Staff gage at Zindel Ferry, $1\frac{1}{2}$ miles below Joseph Creek and 2 miles above mouth of river, in Asotin County.

A considerable amount of water was diverted above the station for irrigation.

Drainage area, 3,950 square miles.

Monthly discharge of Grande Ronde River at Zindel.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
July.....	5,850	1,580	3,310	204,000	A.
August.....	1,450	805	1,050	64,600	A.
September.....	900	720	767	45,600	A.
The period.....				314,000	
1904-5.					
October.....	1,100	720	871	53,600	A.
November.....	805	762	781	46,500	A.
December.....	1,000	680	802	49,300	B.
January.....	1,830	720	1,010	62,100	B.
February.....	2,250	720	1,150	63,900	B.
March.....	3,850	1,960	2,720	167,000	B.
April.....	4,630	2,580	3,320	198,000	B.
May.....	5,220	2,950	3,900	240,000	B.
June.....	6,180	2,100	3,810	227,000	B.
July.....	1,960	720	1,240	76,200	B.
August.....	720	565	597	36,700	B.
September.....	805	530	584	34,800	B.
The year.....	6,180	530	1,730	1,260,000	
1905-6.					
October.....	1,000	720	829	51,000	B.
November.....	1,100	720	787	46,800	B.
December.....	805	565	754	46,400	B.
January.....	1,100	720	834	51,300	B.
February.....	2,950	762	1,480	82,200	B.
March.....	10,000	1,330	3,440	212,000	B.
April.....	11,400	5,850	7,930	472,000	B.
May.....	7,980	2,760	4,480	275,000	B.
June.....	9,600	2,760	6,010	358,000	B.
July.....	2,950	720	1,780	109,000	B.
August.....	900	565	704	43,300	B.
September.....	720	640	677	40,300	B.
The year.....	11,400	565	2,470	1,790,000	
1906-7.					
October.....	950	640	756	46,500	B.
November.....	13,500	805	2,980	177,000	B.
December.....	9,180	1,450	3,680	226,000	B.
January.....	5,850	1,450	2,730	168,000	B.
February.....	16,100	3,850	9,100	505,000	B.
March.....	16,600	3,610	6,670	410,000	B.
April.....	18,500	5,850	11,900	708,000	B.
May.....	11,400	6,180	8,590	528,000	B.
June.....	9,600	3,160	5,820	346,000	B.
July.....	6,520	2,100	3,400	209,000	B.
August.....	1,830	805	1,160	71,300	B.
September.....	1,160	805	929	55,300	B.
The year.....	18,500	640	4,770	3,450,000	
1907-8.					
October.....	805	720	745	45,800	B.
November.....	1,330	720	876	52,100	B.
December.....	5,850	1,000	1,640	101,000	B.
January.....	1,700	900	1,150	70,700	B.
February.....	2,040	805	1,170	67,300	B.
March 1-13.....	18,500	1,330	3,130	93,100	B.
April 4-30.....	13,300	3,610	8,350	447,000	B.
May.....	7,230	3,160	4,660	287,000	B.
June.....	9,600	2,760	5,270	314,000	B.
July.....	4,100	1,000	2,310	142,000	B.
August.....	900	435	637	39,200	B.
September.....	1,830	720	859	51,100	B.

Monthly discharge of Grande Ronde River at Zindel—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
October.....	2,760	720	1,180	72,600	B.
November.....	1,220	900	999	59,400	B.
December.....	950	565	801	49,300	B.
January.....	4,630	400	1,480	91,000	C.
February.....	3,610	1,100	1,800	100,000	B.
March.....	5,850	1,700	3,440	212,000	B.
April.....	6,520	3,160	4,770	284,000	B.
May.....	8,770	3,610	5,220	321,000	B.
June.....	11,800	3,610	6,720	400,000	B.
July.....	4,100	1,580	2,360	145,000	B.
August.....	1,580	640	914	56,200	B.
September.....	762	565	667	39,700	B.
The year.....	11,800	400	2,540	1,830,000	
1909-10.					
October.....	900	565	722	44,400	B.
November.....	9,600	900	2,290	136,000	B.
December.....	3,160	565	1,230	75,600	B.
January.....	1,000	380	600	36,900	B.
February.....	2,950	720	1,240	68,900	B.
March.....	33,500	7,230	18,500	1,140,000	C.
April.....	19,600	6,870	11,100	660,000	B.
May.....	13,300	4,920	7,250	446,000	A.
June.....	5,530	1,450	3,100	184,000	A.
July.....	1,450	720	1,040	64,000	A.
August.....	640	565	567	34,900	A.
September.....	720	565	626	37,200	A.
The year.....	33,500	380	4,040	2,930,000	
1910-11.					
October.....	1,450	640	824	50,700	A.
November.....	3,160	720	1,860	111,000	A.
December.....	3,380	1,330	2,040	125,000	A.
January.....	1,700	1,100	1,330	81,800	B.
February.....	1,960	1,000	1,420	78,900	A.
March.....	7,980	2,250	4,700	289,000	A.
April.....	6,870	1,580	3,870	230,000	A.
May.....	9,180	3,160	5,850	360,000	A.
June.....	7,980	2,950	5,800	345,000	A.
July.....	2,950	1,580	2,060	127,000	A.
August.....	1,330	565	760	46,700	A.
September.....	720	565	620	36,900	A.
The year.....	9,180	565	2,600	1,880,000	
1911-12.					
October.....	900	640	727	44,700	A.
November.....	1,580	640	999	59,400	A.
December.....	900	495	707	43,500	A.
January.....	8,370	435	2,680	165,000	B.
February.....	11,800	2,250	5,480	315,000	A.
March.....	8,370	1,580	4,490	276,000	A.
April.....	18,500	7,420	11,900	708,000	B.
May.....	21,800	7,600	15,900	978,000	B.
June.....	17,400	6,520	12,500	744,000	B.
July.....	6,180	2,250	3,580	220,000	A.
August.....	2,250	1,220	1,600	98,400	A.
September.....	1,580	1,330	1,430	85,100	A.
The year.....	21,800	435	5,150	3,740,000	
1912.					
October.....	2,040	1,390	1,530	94,100	B.
November.....	3,610	1,220	2,320	138,000	B.
December.....	1,310	1,000	1,100	67,600	B.
The period.....				300,000	

Yearly discharge of Grande Ronde River at Zindel.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1905.....	6,180	530	584	Sept.....	1,730	1,260,000
1906.....	11,400	565	677	Sept.....	2,470	1,790,000
1907.....	18,500	640	756	Oct.....	4,770	3,450,000
1909.....	11,800	400	667	Sept.....	2,540	1,830,000
1910.....	33,500	380	567	Aug.....	4,040	2,930,000
1911.....	9,180	565	620	Sept.....	2,600	1,880,000
1912.....	21,800	435	707	Dec.....	5,150	3,740,000
The period.....	33,500	380	567	Aug., 1910	3,330	2,410,000

ASOTIN CREEK NEAR ASOTIN (153).

Staff gage 1904-1906 at Shellman ranch, 8 miles west of Asotin, in Asotin County; 1910-1911 in SE. ¼ sec. 20, T. 10 N., R. 45 E., above intake of Lewiston-Clarkston Improvement Co.'s power plant, a quarter of a mile below former site.

Drainage area, 171 square miles; measured on General Land Office map.

Monthly discharge of Asotin Creek near Asotin.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1904.							
March 21-31.....	193	116	156	0.912	0.37	3,400	C.
April.....	1,180	198	469	2.74	3.06	27,900	C.
May.....	417	19	276	1.61	1.86	17,000	C.
June.....	277	78	159	.930	1.04	9,460	C.
July.....	116	50	70.8	.414	.48	4,350	C.
August.....	54	44	47.0	.275	.32	2,890	C.
September.....	64	44	47.3	.277	.31	2,810	C.
The period.....						67,800	
1904-5.							
October.....	85	47	50.5	.295	.34	3,100	C.
November 1-19.....	47	47	47.0	.275	.19	1,770	C.
April.....	96	62	80.3	.470	.52	4,780	C.
May.....	106	78	91.8	.537	.62	5,640	C.
June.....	283	54	189	1.11	1.24	11,200	C.
July.....	70	34	43.1	.252	.29	2,650	C.
August.....	34	34	34.0	.199	.23	2,090	C.
September.....	62	34	36.2	.212	.24	2,150	C.
1905-6.							
October.....	47	40	40.7	.238	.28	2,500	C.
November.....	40	34	39.1	.229	.26	2,330	C.
December.....	47	34	38.9	.228	.26	2,390	C.
January.....	122	34	45.5	.266	.31	2,800	C.
February 1-17.....	57	47	47.6	.278	.18	1,600	C.
May 17-31.....	147	70	85.0	.497	.28	2,530	C.
June.....	147	54	89.0	.520	.58	5,300	C.
July.....	54	40	41.8	.244	.28	2,570	C.
August.....	40	29	35.0	.205	.24	2,150	C.
September.....	29	29	29.0	.170	.19	1,730	C.
1906.							
October.....	40	29	39.3	.230	.27	2,420	C.
November.....	219	40	82.5	.482	.54	4,910	C.
1910.							
August 15-31.....	29.4	24.6	27.0			910	B.
September 1-22.....	34.6	28.2	30.5			1,330	B.
1911.							
July 24-31.....	28.6	25.4	27.1			430	B.
August.....	30.9	27.4	28.7			1,760	B.
September.....	36.3	28.7	30.6			1,820	B.
October 1-6.....	40.0	30.2	33.5			399	B.

TUCANNON RIVER NEAR POMEROY (154).

Staff gage in sec. 13, T. 11 N., R. 40 E., at highway bridge at abandoned post office of Marengo, 9 miles southwest of Pomeroy, in Columbia County.

Several small ditches diverted water above the station for irrigation.

Monthly discharge of Tucannon River near Pomeroy.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1913.					
September.....	101	70	74.8	4,450	B.
1913-14.					
October.....	108	70	82.9	5,100	B.
November.....	101	78	81.0	4,820	B.
December.....	97	78	78.9	4,850	B.
January.....	97	78	86.4	5,310	B.
February.....	228	76	129	7,160	A.
March.....	274	137	204	12,500	A.
April.....	354	137	229	13,600	A.
May.....	307	135	202	12,400	A.
June.....	160	82	108	6,430	A.
July.....	95	55	67.5	4,150	A.
August.....	56	48	54.6	3,360	B.
September.....	89	53	67.9	4,040	B.
The year.....	354	48	116	83,700	
1914-15.					
October.....	87	56	72.1	4,430	B.
November.....	117	72	84.7	5,040	B.
December.....	99	27	60.3	3,710	B.
January.....	82	51	69.1	4,250	B.
February.....	216	87	105	5,830	B.
March.....	.....	87	125	7,690	C.
April.....	246	135	171	10,200	B.
May.....	.....	148	199	12,200	B.
June.....	150	66	94.0	5,590	B.
The period.....	.....	27	109	58,900	

NOTE.—Maximum discharge during period of record, 370 second-feet at 4.40 p. m. Apr. 15, 1914; minimum discharge 25 second-feet at 7.30 a. m. Dec. 24, 1914.

TUCANNON RIVER NEAR STARBUCK (155).

Staff gage in sec. 23, T. 12 N., R. 38 E., half a mile below Petaha Creek and 6 miles east of Starbuck, in Columbia County.

Many small irrigation ditches divert water above the gage; amount diverted probably 10 per cent of usual flow during July and August. A large part of the diverted water seeps back to the river above the gage.

Monthly discharge of Tucannon River near Starbuck.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1914-15.					
November 8-30.....	123	78	93.5	4,270	A.
December.....	92	44	66.8	4,110	B.
January.....	175	76	93.5	5,750	B.
February.....	680	102	155	8,610	A.
March.....	208	100	132	8,120	A.
April.....	378	142	180	10,700	A.
May.....	290	152	210	12,900	A.
June.....	184	74	113	6,720	A.
July.....	70	52	63.3	3,890	A.
August.....	53	39	43.4	2,670	B.
September.....	66	41	50.2	2,990	A.
The period.....	.....	.....	.....	70,700	

Monthly discharge of Tucannon River near Starbuck—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	81	51	60.3	3,710	B.
November.....	120	61	84.2	5,010	B.
December.....	304	88	138	8,480	B.
January.....	1,480	.....	153	9,410	C.
February.....	5,000	.....	700	40,300	C.
March.....	1,110	197	627	38,600	A.
April.....	565	270	385	22,900	A.
May.....	635	232	415	25,500	A.
June.....	530	251	402	23,900	A.
July.....	360	81	168	10,300	A.
August.....	92	65	72.0	4,430	B.
September.....	75	69	71.1	4,230	B.
The year.....	5,000	51	271	197,000	
1916-17.					
October.....	116	68	85.2	5,240	C.
November.....	251	.....	131	7,800	C.
December.....	232	.....	157	9,650	B.
January.....	425	.....	162	9,960	B.
February.....	565	126	204	11,300	A.
March.....	600	122	206	12,700	A.
April.....	1,690	270	668	39,700	A.
May.....	1,840	590	986	60,600	A.
June.....	1,020	288	577	34,300	A.
July.....	288	.....	161	9,900	A.
August.....	.....	.....	70.0	4,300	D.
September.....	122	58	77.0	4,580	C.
The year.....	1,840	.....	290	210,000	

NOTE.—Maximum discharge during period of record, 5,740 second-feet at 7 p. m. Feb. 10, 1916; minimum discharge, 39 second-feet Aug. 24-31, 1915. Mean discharge for August, 1917, estimated by hydrographic comparison with flow of Mill Creek near Walla Walla.

PALOUSE RIVER NEAR POTLATCH, IDAHO (156).

Water-stage recorder a quarter of a mile above Kennedy Ford, three-fourths mile below Deep Creek, and 3½ miles below Potlatch, in Latah County.

Daily flow affected by regulation of Potlatch Lumber Co.'s reservoir, 5 miles above station.

Monthly discharge of Palouse River near Potlatch, Idaho.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1914-15.					
October.....	.....	.....	8.49	522	B.
November.....	148	10.5	33.2	1,980	B.
December.....	26	.....	14.0	861	C.
January.....	.....	.....	12.9	793	D.
February.....	163	.....	90.4	5,020	B.
March.....	1,030	128	351	21,600	A.
April.....	765	76	285	17,000	A.
May.....	2,580	83	447	27,500	A.
June.....	343	10.9	93.1	5,540	A.
July.....	35	6.7	18.4	1,130	B.
August.....	14.2	4.4	8.15	501	B.
September.....	8.5	3.2	5.43	323	C.
The year.....	2,580	3.2	114	82,800	

Monthly discharge of Palouse River near Potlatch, Idaho—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	14.6	6.4	12.0	738	C.
November.....	117	9.3	26.0	1,550	B.
December.....	488	.....	83.4	5,130	A.
January.....	.....	.....	44.0	2,710	B.
February.....	1,180	.....	521	30,000	A.
March.....	4,960	200	1,970	121,000	A.
April.....	2,240	399	1,100	65,500	A.
May.....	1,070	236	500	30,700	A.
June.....	220	37	128	7,620	A.
July.....	172	30	60.9	3,740	A.
August.....	26	13.4	19.0	1,170	B.
September.....	21	13	16.3	970	B.
The year.....	4,960	6.4	373	271,000	
1916-17.					
October.....	16	11	13.8	848	B.
November.....	.....	11	22.8	1,360	B.
December.....	.....	.....	34.4	2,120	C.
January.....	53	.....	34.9	2,150	C.
February.....	185	42	97.4	5,410	A.
March.....	533	40	120	7,380	A.
April.....	3,630	299	2,060	123,000	A.
May.....	2,880	944	1,710	105,000	A.
June.....	746	65	315	18,700	A.
July.....	67	16	30.4	1,870	A.
August.....	21	3.6	10.6	652	B.
September.....	18	4.0	8.28	493	B.
The year.....	3,630	3.6	372	269,000	
1917-18.					
October.....	20	4.8	9.90	609	B.
November.....	16	4.0	10.2	607	B.
December.....	2,260	14.	372	22,900	B.
January.....	1,510	.....	685	42,200	B.
February.....	2,070	185	573	31,800	A.
March.....	2,520	190	918	56,400	A.
April.....	1,130	217	532	31,700	A.
May.....	215	70	123	7,560	A.
June.....	76	22	40.5	2,410	A.
July.....	23	7.3	13.3	818	A.
August.....	13	6.2	9.55	537	B.
September.....	11	2.9	6.02	358	B.
The year.....	2,520	2.9	273	198,000	
1918-19.					
October.....	16.6	2.4	10.4	640	A.
November.....	52	8.4	24.4	1,450	A.
December.....	55	.....	24.2	1,490	B.
January.....	687	.....	137	8,420	C.
February.....	299	.....	102	5,660	C.
March.....	3,030	124	1,000	61,500	A.
April.....	2,970	565	1,200	71,400	A.
May.....	496	92	195	12,000	A.
June.....	95	18.8	38.7	2,300	A.
July.....	20	5.3	12.3	756	A.
August.....	8.6	1.4	4.23	260	B.
September.....	.....	.....	3.79	226	D.
The year.....	3,030	.....	230	166,000	

NOTE.—Maximum discharge during period of record, 5,090 second-feet at 9.15 a. m. Mar. 21, 1916; minimum discharge, about 1 second-foot at 3 a. m. Dec. 21, 1914.

Yearly discharge of Palouse River near Potlatch, Idaho.

Year ending September 30.	Discharge in second-feet.				Annual mean.	Annual run-off in acre-feet.	
	Maximum day.	Minimum.		Calendar month.			
		Day.	Calendar month.				
			Mean.				Month.
1915.....	2,580	3.2	5.43	Sept.....	114	82,800	
1916.....	4,960	6.4	12.0	Oct.....	373	271,000	
1917.....	3,630	3.6	8.28	Sept.....	372	269,000	
1918.....	2,520	2.9	6.02	Sept.....	273	198,000	
1919.....	3,030	.....	3.79	Sept.....	230	166,000
The period.....	4,960	.....	3.79	Sept., 1919	272	197,000

PALOUSE RIVER AT ELBERTON (157).

Staff gage at highway bridge half a mile above railroad station at Elberton, in Whitman County.

Drainage area, 368 square miles.

Monthly discharge of Palouse River at Elberton.

Month.	Discharge in second-feet.			Run-off in acre-feet.
	Maximum.	Minimum.	Mean.	
1904.				
May 6-31.....	330	200	402	24,700
June.....	316	62	162	9,640
July.....	140	14	45.6	2,800
August.....	29	5	10.1	621
September.....	21	5	10.7	637
October.....	49	9	23.1	1,420
November.....	115	9	31.1	1,850
December.....	115	21	54.4	3,340
The period.....	.....	.....	.....	45,000

PALOUSE RIVER NEAR WINONA (158).

Staff gage below Rock Creek, 7 miles southwest of Winona, in Whitman County.

A large proportion of the extreme low-water flow was diverted above the gage for irrigation.

Monthly discharge of Palouse River near Winona.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1914-15.					
October.....	.....	.....	30	1,840	D.
November.....	.....	.....	55	3,270	D.
December.....	.....	.....	30	1,840	D.
January.....	68	24	47.5	2,920	C.
February.....	2,530	233	763	42,400	B.
March.....	1,010	.....	455	28,000	C.
April.....	1,160	166	420	25,000	B.
May.....	2,620	180	546	33,600	B.
June.....	482	82	187	11,100	B.
July.....	76	37	52.1	3,200	C.
August.....	38	13	22.9	1,410	C.
September.....	14	9	11.6	690	D.
The year.....	2,620	.....	214	155,000	.....

Monthly discharge of Palouse River near Winona--Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	27	11	16.9	1,040	B.
November.....	131	20	51.8	3,080	B.
December.....	690	69	156	9,590	B.
January.....	2,170	.....	218	13,400	C.
February.....	10,200	.....	2,760	159,000	C.
March.....	9,140	928	4,140	255,000	B.
April.....	2,880	1,090	1,950	116,000	B.
May.....	1,140	340	664	40,800	B.
June.....	340	144	222	13,200	B.
July.....	224	68	127	7,810	B.
August.....	89	55	63.8	3,920	B.
September.....	64	31	49.0	2,920	B.
The year.....	10,200	11	861	626,000	
1916-17.					
October.....	49	28	37.9	2,330	B.
November.....	317	44	77.6	4,620	A.
December.....	675	64	146	8,980	A.
January.....	985	92	275	16,900	A.
February.....	2,600	226	1,200	66,600	A.
March.....	4,950	420	1,300	79,900	B.
April.....	10,500	2,780	4,740	282,000	B.
May.....	3,550	1,470	2,350	144,000	B.
June.....	1,470	129	547	32,500	A.
July.....	154	46	81.7	5,020	A.
August.....	48	24	34.1	2,100	B.
September.....	24	14	20.1	1,200	B.
The year.....	10,500	14	894	646,000	

NOTE.—Maximum discharge during period of record, 11,800 second-feet Apr. 8 or 9, 1917; minimum discharge, 9 second-feet Sept. 9-10, 26-29, 1915. Monthly discharge, October to December, 1914, estimated by comparison with record of flow of Palouse River at Hooper.

PALOUSE RIVER AT HOOPER (159).

Staff gage 1 mile east of Hooper and 2 miles above Cow Creek, in Whitman County. Several small irrigation ditches diverted water above the gage, the largest being the Palouse Irrigation & Power Co.'s canal (capacity about 15 second-feet). Drainage area, 2,210 square miles.

Monthly discharge of Palouse River at Hooper.

Month.	Discharge in second-feet.			Run-off in acre-feet.
	Maximum.	Minimum.	Mean.	
1897.				
September 9-30.....	86	50	64	3,810
1897-98.				
October.....	67	50	57	3,500
November.....	998	61	357	21,200
December.....	2,810	271	1,420	87,100
January.....	2,450	525	1,040	63,800
February.....	7,070	620	3,190	177,000
March.....	3,280	1,330	2,140	131,000
April.....	3,010	1,860	2,410	143,000
May.....	1,560	393	733	45,100
June.....	735	148	305	18,100
July.....	148	55	100	6,150
August.....	55	20	33	2,030
September.....	30	25	30	1,780
The year.....	7,070	20	967	700,000

Monthly discharge of Palouse River at Hooper—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.
	Maximum.	Minimum.	Mean.	
1898-99.				
October.....	73	30	46	2,830
November.....	131	67	83	4,940
December.....	205	55	99	6,090
January.....	3,440	73	1,130	69,200
February.....	3,209	446	1,360	75,400
March.....	2,120	932	1,370	83,400
April.....	4,200	1,130	1,890	113,000
May.....	1,720	333	827	50,800
June.....	333	79	176	10,500
July.....	107	20	51	3,140
August.....	29	20	24	1,480
September.....	32	22	27	1,610
The year.....	4,200	20	583	422,000
1899-1900.				
October.....	148	22	49	3,010
November.....	377	50	110	6,540
December.....	1,660	248	718	44,100
April.....	1,130	226	568	33,800
May.....	866	271	392	24,100
June.....	295	50	142	8,450
July.....	50	24	34	2,090
August.....	24	20	21	1,290
September.....	22	17	20	1,190
1900-1901.				
October.....	185	19	93	5,720
November.....	320	18	89	5,300
December.....	2,050	226	811	49,900
January.....	3,770	320	1,080	66,500
February.....	4,890	166	1,530	84,800
March.....	4,860	735	2,100	129,000
April.....	1,330	446	861	51,200
May.....	410	166	248	15,200
June.....	484	100	176	10,500
July.....	131	16	73	4,490
August.....	16	2	9	553
September.....	10	2	7	417
The year.....	4,890	2	585	424,000
1901-2.				
October.....	10	7	8	492
November.....	86	10	23	1,370
December.....	347	19	74	4,550
January.....	625	106	216	13,300
February.....	2,910	100	1,090	60,400
March.....	1,710	280	716	44,000
April.....	725	240	370	22,100
May.....	2,090	175	515	31,700
June.....	325	95	150	8,930
July.....	1,140	87	178	10,900
August.....	85	64	75	4,610
September.....	66	60	62	3,690
The year.....	2,910	7	285	206,000
1902.				
October.....	70	66	67	4,180
November.....	220	67	118	7,080
December.....	1,520	106	452	27,800
The period.....				39,000
1904.				
January.....	1,080	158	409	25,200
February.....	2,440	283	873	50,200
March.....	16,400	1,260	4,300	265,000
April.....	6,470	1,400	3,350	199,000
May.....	1,750	259	678	41,700
June.....	471	117	258	15,400
July.....	158	41	78.8	4,840
August.....	36	17	24.5	1,510
September.....	19	15	17.3	1,030
The period.....				604,000

Monthly discharge of Palouse River at Hooper—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1904-5.					
October.....	36	19	27.8	1,710	
November.....	69	28	39.6	2,360	
December.....	117	36	63.0	3,870	
January.....	555	74	181	11,100	
February.....	424	150	225	12,500	
March.....	802	198	348	21,400	
April.....	666	218	380	22,600	
May.....	555	159	294	18,100	
June.....	650	109	258	15,400	
July.....	159	33	73.9	4,540	
August.....	33	22	27.2	1,670	
September.....	27	19	22.2	1,320	
The year.....	802	19	161	117,000	
1905-6.					
October.....	132	30	82.2	5,050	
November.....	124	52	76.9	4,580	
December.....	261	88	126	7,750	
January.....	915	102	319	19,600	B.
February.....	2,420	363	878	48,800	B.
March.....	2,470	435	964	59,300	B.
April.....	2,120	420	943	56,100	B.
May.....	730	136	253	15,600	B.
June.....	690	118	279	16,600	B.
July.....	136	40	74.8	4,600	B.
August.....	36	24	27.4	1,680	B.
September.....	30	30	30.0	1,790	B.
The year.....	2,470	24	334	241,000	
1906-7.					
October.....	40	30	34.1	2,100	B.
November.....	1,020	36	235	14,000	B.
December.....	6,200	102	1,470	90,400	B.
January.....	3,030	558	1,240	76,200	B.
February.....	9,360	1,440	4,820	268,000	B.
March.....	6,500	2,000	3,550	218,000	B.
April 1-20.....	3,330	1,650	2,570	102,000	B.
The period.....				771,000	
1908.					
June 14-30.....	275	110	172	5,800	B.
July.....	127	24	55.7	3,420	B.
August.....	31	20	26.5	1,630	B.
September.....	29	22	24.6	1,460	B.
The period.....				12,300	
1908-9.					
October.....	95	29	52.6	3,230	B.
November.....	102	52	66.6	3,960	B.
December.....	174	67	82.1	5,050	B.
January.....	17,200	60	2,530	156,000	C.
February.....	4,110	375	1,190	66,100	B.
March.....	2,120	517	961	59,100	B.
April.....	1,080	307	568	33,800	B.
May.....	670	176	331	20,400	B.
June.....	205	46	117	6,960	B.
July.....	180	23	43.6	2,680	B.
August.....	34	15	21.9	1,350	B.
September.....	82	12	16.7	994	B.
The year.....	17,200	12	497	360,000	
1909-10.					
October.....	49	22	30.0	1,840	B.
November.....	569	32	186	11,100	B.
December.....	1,260	155	355	21,800	B.
January.....	8,650	118	1,130	69,500	B.
February.....	13,300	430	1,800	100,000	B.
March.....	27,800	1,200	6,660	409,000	B.
April.....	3,630	575	1,710	102,000	B.
May.....	510	186	328	20,200	B.
June.....	186	0	112	6,660	B.
July.....	236	11	46.9	2,880	B.
August.....	186	9	31.5	1,940	B.
September.....	42	16	21.2	1,260	B.
The year.....	27,800	0	1,030	748,000	

Monthly discharge of Palouse River at Hoppes—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1910-11.					
October.....	42	25	36.7	2,260	B.
November.....	377	42	125	7,440	B.
December.....	350	155	244	15,000	B.
January.....	363	85	218	13,400	B.
February.....	435	176	308	17,100	B.
March.....	3,530	246	1,470	90,400	B.
April.....	1,020	363	559	33,300	B.
May.....	815	271	400	24,600	B.
June.....	310	65	142	8,450	B.
July.....	78	2.0	36.1	2,220	B.
August.....	13	4.4	6.83	420	C.
September.....	20	5.0	13.9	827	B.
The year.....	3,530	2.0	297	215,000	
1911-12.					
October.....	40	24	29.4	1,810	B.
November.....	258	20	78.2	4,650	B.
December.....	92	46	78.3	4,810	B.
January.....	3,230	20	835	51,300	B.
February.....	3,130	690	1,470	84,600	B.
March.....	1,880	540	1,040	64,000	B.
April.....	1,800	770	1,130	67,200	B.
May.....	2,740	377	1,150	70,700	B.
June.....	575	68	270	16,100	B.
July.....	108	20	63.5	3,900	B.
The period.....				369,000	
1913.					
March 7-31.....	12,800	1,560	4,730	235,000	A.
April.....	11,800	1,500	4,130	246,000	A.
May.....	1,500	591	1,070	65,800	A.
June.....	510	200	317	18,900	A.
July.....	300	54	143	8,790	B.
August.....	52	28	31.7	1,950	D.
September.....	32	26	28.2	1,680	D.
The period.....				578,000	
1913-14.					
October.....	74	28	51.7	3,180	C.
November.....	222	70	104	6,190	C.
December.....	211	80	114	7,010	B.
January.....	1,380	107	667	41,000	A.
February.....	4,760	272	1,160	64,400	A.
March.....	2,970	677	1,370	84,200	A.
April.....	1,880	379	925	55,000	A.
May.....	414	156	281	17,300	A.
June.....	156	38	87.1	5,180	A.
July.....	52	8	27.2	1,670	A.
August.....	8	6	6.61	406	C.
September.....	21	6	12.5	744	B.
The year.....	4,760	6	395	286,000	
1914-15.					
October.....	83	14	31.8	1,930	A.
November.....	113	28	59.8	3,560	A.
December.....	58	22	36.9	2,270	A.
January.....	71	29	46.6	2,870	A.
February.....	2,400	432	847	47,000	A.
March.....	765	346	505	31,100	A.
April.....	1,260	166	442	26,300	A.
May.....	2,580	186	556	34,200	A.
June.....	432	76	185	11,000	A.
July.....	76	25	45.6	2,800	A.
August.....	33	8	16.4	1,010	B.
September.....	20	6	12.1	720	B.
The year.....	2,580	6	227	165,000	
1915-16.					
October.....	25	6	17.7	1,090	B.
November.....	156	25	58.2	3,460	A.
December.....	591	90	167	10,300	A.
January.....	2,580	70	345	21,200	A.
February.....	14,200	196	3,540	204,000	B.
March.....	13,800	1,040	5,520	339,000	B.
The period.....				579,000	

NOTE.—Maximum discharge during period of record, 27,800 second-feet Mar. 2, 1910. No flow past gage part of day (entire flow diverted) June 25, 1910.

Yearly discharge of Palouse River at Hooper.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1898.....	7,070	20	30	Sept.....	967	700,000
1899.....	4,200	20	24	Aug.....	583	422,000
1901.....	4,890	2	7	Sept.....	585	424,000
1902.....	2,910	7	8	Oct.....	235	206,000
1905.....	802	19	22.2	Sept.....	161	117,000
1906.....	2,470	24	27.4	Aug.....	334	241,000
1909.....	17,200	12	16.7	Sept.....	497	360,000
1910.....	27,800	0	21.2	Sept.....	1,030	748,000
1911.....	3,530	2.0	6.83	Aug.....	297	215,000
1914.....	4,760	6	6.61	Aug.....	395	286,000
1915.....	2,580	6	12.1	Sept.....	227	165,000
The period.....	27,800	0	6.61	Aug., 1914	487	353,000

ROCK CREEK NEAR EWAN¹² (160).

Staff gage at highway bridge just below outlet of Rock Lake, 1½ miles north of Ewan, and 9 miles northeast of St. John, in Whitman County.

Flow is seldom regulated at low dam at outlet of Rock Lake.

Drainage area, 650 square miles.

Monthly discharge of Rock Creek near Ewan.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
October.....	1.5	0.3	a 0.48	16	
November.....	8	.4	3.66	218	
December.....	38	8	20.0	1,230	
January.....	193	40	109	6,700	
February.....	820	149	268	15,400	
March.....	1,980	575	969	59,600	
April.....	705	183	345	20,500	
May.....	183	64	113	6,950	
June.....	64	28	49.7	2,960	
July.....	25	10	19.1	1,170	
August.....	10	1.5	4.9	301	
September.....	1	.0	.42	25	
The period.....	1,980	.0	158	115,000	
1904-5.					
October.....	.2	.0	.06	3.7	
November.....	.5	.2	.22	13	
December.....	10	.5	3.3	203	
January.....	203	12	59.2	3,640	
February.....	174	82	110	6,100	
March.....	84	64	75.2	4,620	
April.....	80	57	69.0	4,110	
May.....	57	25	39.6	2,440	
June.....	28	19	23.7	1,410	
July.....	20	5	11.8	726	
August.....	4	.0	.89	55	
September.....	.0	.0	.00	.0	
The year.....	203	.0	32.2	23,300	

^a The mean flow during October, 1903, is considered to have been the same as for Oct. 15-31, 1903.

¹² Formerly described as "near St. John."

Monthly discharge of Rock Creek near Ewan—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1914.					
March 30-31.....	119	119	119	472	B.
April.....	134	76	113	6,720	B.
May.....	76	23	46.7	2,870	B.
June.....	29	9	17.3	1,030	C.
July.....	9	6	7.74	476	D.
August.....	6	.1	2.17	133	D.
September.....	.1	.0	.01	.6	D.
The period.....				11,700	
1914-15.					
October.....	.1	.0	.05	3.07	D.
November.....	1.1	.1	.61	36.3	D.
December.....	1.8	1.0	1.30	79.9	D.
January.....	5	1.8	3.30	203	D.
February.....	393	5	179	9,940	B.
March.....	174	39	93.9	5,770	B.
April.....	39	35	36.5	2,170	B.
May.....	51	35	41.6	2,560	B.
June.....	50	35	43.2	2,570	B.
July.....	36	23	30.4	1,870	B.
August.....	23	9	15.5	953	C.
September.....	6	1.5	4.30	256	D.
The year.....	393	.0	36.5	26,400	
1915-16.					
October.....	3.2	1.5	1.88	116	B.
November.....	9.0	1.5	4.43	264	B.
December.....	21	9.0	14.6	898	B.
January.....	48	21	26.2	1,610	B.
February.....	1,520	49	542	31,200	B.
March.....	1,420	275	768	47,200	B.
April.....	790	210	391	23,300	B.
May.....	174	76	117	7,190	B.
June.....	75	57	63.0	3,750	B.
July.....	59	44	50.1	3,080	B.
August.....	44	23	34.2	2,100	B.
September.....	23	13	18.3	1,090	B.
The year.....	1,520	1.5	168	122,000	
1916-17.					
October.....	12.6	7.3	8.83	543	B.
November.....	26	7.3	10.0	595	B.
December.....	30	18	26.2	1,610	B.
January.....	39	26	32.4	1,990	B.
February.....	680	40	343	19,000	B.
March.....	1,450	105	397	24,400	B.
April.....	1,210	245	689	41,000	B.
May.....	230	150	167	10,300	B.
June.....	150	34	87.2	5,190	B.
July.....	34	20	28.0	1,720	B.
August.....	20	9.5	14.2	873	B.
September.....	9.1	2.7	6.13	365	B.
The year.....	1,450	2.7	149	108,000	

NOTE.—Maximum discharge during period of record, 1,980 second-feet, Mar. 9, 1904. No flow Sept. 23-30, Oct. 1-9 and 12-24, 1904; Aug. 23 to Sept. 30, 1905; and Sept. 4 to Oct. 17, 1914.

Yearly discharge of Rock Creek near Ewan.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1904.....	1,980	0.0	0.42	Sept.....	158	115,000
1905.....	203	0	.00	Sept.....	32.2	23,300
1915.....	393	0	.05	Oct.....	36.5	26,400
1916.....	1,520	1.5	1.88	Oct.....	168	122,000
1917.....	1,450	2.7	6.13	Sept.....	149	108,000
The period.....	1,980	.0	.00	Sept., 1905	109	78,900

WALLA WALLA RIVER BASIN.

MILL CREEK NEAR WALLA WALLA (161).

Staff gage 500 feet below diversion dam of Walla Walla waterworks and 12 miles east of Walla Walla, in Walla Walla County.

The city of Walla Walla diverts from 21 to 32 second-feet of water above the station for public water supply. Flow is regulated occasionally when gates at intake of water-supply conduit are closed when the settling basins are cleaned.

Monthly discharge of Mill Creek near Walla Walla.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1913.					
August 27-31.....	29	29	29.0	288	B.
September.....	36	29	29.3	1,740	B.
The period.....				2,030	
1913-14.					
October.....	124	29	47.0	2,890	B.
November.....	156	38	66.0	3,930	B.
December.....	73	36	43.3	2,660	B.
January.....	300	49	120	7,380	A.
February.....	387	50	141	7,830	A.
March.....	405	83	182	11,200	A.
April.....	236	83	134	7,970	A.
May.....	103	60	80.4	4,940	A.
June.....	73	40	50.3	2,990	B.
July.....	39	32	35.5	2,180	B.
August.....	33	32	32.6	2,000	B.
September.....	60	32	36.4	2,170	B.
The year.....	405	29	80.2	58,100	
1914-15.					
October.....	52	34	38.0	2,340	A.
November.....	134	35	50.1	2,980	A.
December.....	41		33.8	2,080	B.
January.....	52	34	40.5	2,490	A.
February.....	209	61	101	5,610	A.
March.....	334	61	124	7,620	A.
April.....	334	64	130	7,740	A.
May.....	440	66	148	9,100	A.
June.....	102	32	49.5	2,950	A.
July.....	37	27	29.8	1,830	A.
August.....	27	22	24.4	1,500	A.
September.....	31	22	24.1	1,430	A.
The year.....	440	22	65.9	47,700	

Monthly discharge of Mill Creek near Walla Walla—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	52	23	28.4	1,750	A.
November.....	224	27	72.1	4,290	A.
December.....	602	50	118	7,260	A.
January.....	224	.....	64.8	3,980	B.
February.....	440	46	201	11,600	A.
March.....	732	92	315	19,400	A.
April.....	266	146	197	11,700	A.
May.....	240	117	168	10,300	A.
June.....	122	66	98.5	5,860	A.
July.....	103	32	50.9	3,130	A.
August.....	37	27	30.7	1,890	A.
September.....	42	26	29.1	1,730	A.
The year.....	732	23	114	82,900	
1916-17.					
October.....	39	28	28.9	1,780	A.
November.....	98	29	38.7	2,300	A.
December.....	257	40	72.6	4,460	A.
January.....	223	39	81.3	5,000	A.
February.....	240	47	116	6,440	A.
March.....	262	43	71.4	4,390	A.
April.....	1,060	105	420	25,000	A.
May.....	1,090	230	495	30,400	B.
June.....	346	106	213	12,700	B.
July.....	106	36	61.0	3,750	B.
August.....	34	28	31.3	1,920	B.
September.....	51	28	30.8	1,830	B.
The year.....	1,090	28	138	100,000	

NOTE.—Maximum discharge during period of record, 1,120 second-feet at 7 a. m. May 13, 1917; minimum discharge, 21 second-feet at 6.30 p. m. Aug. 29 to Sept. 1, 1915.

ROCK CREEK BASIN.

ROCK CREEK NEAR GOLDENDALE (162).

Staff gage at Harding ranch, 2 miles above Squaw Creek and 15 miles east of Goldendale in Klickitat County.

Monthly discharge of Rock Creek near Goldendale.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1911.					
September 18-30.....	0.6	0.4	0.55	14.2	D.
1911-12.					
October.....	1.6	1.2	1.41	86.7	D.
November.....	5.0	.9	2.01	120	C.
December.....	9.6	3.0	5.45	335	C.
January.....	855	1.9	199	12,200	B.
February.....	730	86	176	10,100	B.
March.....	83	29	52.4	3,220	B.
April.....	99	21	44.1	2,620	B.
May.....	34	5.0	12.3	756	B.
June.....	5.6	.6	2.73	162	C.
July.....	8.5	.1	1.38	84.8	D.
August.....	1.0	.2	.36	22.1	D.
September.....	1.2	.4	.86	51.2	D.
The year.....	855	.1	51.8	29,800	
1912-13.					
October.....	3.4	.9	2.20	135	C.
November.....	38	3.6	26.9	1,600	B.
December.....	1,130	5.0	90.4	5,560	B.
January.....	930	36	189	11,600	B.
February.....	1,160	17	238	13,200	C.
March.....	290	59	120	7,380	C.
April.....	124	48	79.3	4,720	C.
The period.....				44,200	

SQUAW CREEK NEAR GOLDENDALE (163).

Staff gage near highway bridge at mouth and 17 miles east of Goldendale, in Klickitat County.

Monthly discharge of Squaw Creek near Goldendale.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1912.					
January.....	600	1.1	149	9,160	D.
February.....	400	29	110	6,330	D.
March.....	30	10	20.9	1,290	D.
April.....	86	6.5	16.0	952	D.
May.....	34	1.8	4.98	306	D.
June.....	2.6	.0	.92	54.7	D.
July.....	1.8	.0	.00	.0	
August.....	0	.0	.00	.0	
September.....	.5	.0	.00	.0	
The period.....				18,100	
1912-13.					
October.....	.0	.0	.00	0	
November.....	.8	.0	.46	27	C.
December.....	500	1.0	29.8	1,830	C.
January.....	396	21	117	7,190	C.
February.....	480	27	113	6,280	C.
March.....	164	62	92.0	5,660	C.
April.....	101	53	74.7	4,440	C.
The period.....				25,400	

KLICKITAT RIVER BASIN.

KLICKITAT RIVER ABOVE PEARL CREEK, NEAR GLENWOOD (164).

A short distance above Pearl Creek and 22 miles north of Glenwood, in Yakima County. Water-stage recorder used August 24 to September 15, 1916; staff gage before and after that period.

Drainage area, 126 square miles.

Monthly discharge of Klickitat River above Pearl Creek, near Glenwood.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1910.					
June.....	767	334	475	28,300	.....
July.....	334	179	250	15,400	.....
August.....	179	148	160	9,840	.....
September.....	148	142	148	8,810	.....
October.....	274	142	195	12,000	.....
November.....	649	155	312	18,600	.....
The period.....				93,000	
1916.					
August 23-31.....	219	173	199	3,550	A.
September.....	178	125	149	8,870	A.
October.....	148	110	120	7,380	A.
November 1-9.....	192	120	137	2,450	A.
The period.....				22,200	

KLICKITAT RIVER NEAR GLENWOOD (165).

Just below Dairy Creek, 3 miles below Big Muddy Creek, and about 6 miles north of Glenwood, in Yakima County. Prior to December 16, 1910, 1 mile upstream. Water-stage recorder used since July 19, 1910; several vertical staffs used prior to that date.

Drainage area, 350 square miles at upper gage, used until December, 1910; 356 square miles at lower gage; measured on Plate II, Water-Supply Paper 253.

Monthly discharge of Klickitat River near Glenwood.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1909-10.							
October.....			435	1.24	1.43	26,700	D.
November.....	6,250	458	1,710	4.89	5.46	102,000	C.
December.....	2,710	463	1,020	2.91	3.36	62,700	B.
January.....	2,280	463	782	2.23	2.57	48,100	B.
February.....	880	590	682	1.95	2.03	37,900	B.
March.....	3,490	1,100	2,020	5.77	6.65	124,000	B.
April.....	3,410	1,370	2,120	6.06	6.76	126,000	B.
May.....	3,340	1,650	2,170	6.20	7.15	133,000	B.
June.....	1,860	824	1,130	3.23	3.60	67,200	B.
July.....	822	691	782	2.23	2.57	48,100	B.
August.....	679	515	599	1.71	1.97	36,800	A.
September.....	598	447	495	1.41	1.57	29,500	A.
The year.....	6,250		1,160	3.31	45.12	842,000	
1910-11.							
October.....	1,050	478	579	1.65	1.90	35,600	A.
November.....	1,440	457	757	2.16	2.41	45,000	A.
December.....	830	519	612	1.75	2.02	37,600	B.
January.....	547	429	491	1.38	1.59	30,200	B.
February.....	471	389	431	1.21	1.26	23,900	A.
March.....	1,096	397	621	1.74	2.01	38,200	A.
April.....	1,665	646	1,090	3.06	3.41	64,900	A.
May.....	2,264	1,347	1,610	4.52	5.21	99,000	A.
June.....	2,753	1,070	1,820	5.11	5.70	108,000	A.
July.....	1,127	700	888	2.49	2.87	54,600	A.
August.....	685	533	603	1.69	1.95	37,100	A.
September.....	722	438	512	1.44	1.61	30,500	A.
The year.....	2,753	389	835	2.35	31.94	605,000	
1911-12.							
October.....	450	388	417	1.17	1.35	25,600	A.
November.....	773	379	518	1.46	1.63	30,800	A.
December.....	502	396	449	1.26	1.45	27,600	A.
January.....	950	380	611	1.72	1.98	37,600	A.
February.....	902	564	699	1.96	2.11	40,200	A.
March.....	640	456	515	1.45	1.67	31,700	A.
April.....	1,370	700	1,000	2.81	3.14	59,500	A.
May.....	2,620	1,260	1,980	5.56	6.41	122,000	B.
June.....	2,140	986	1,550	4.35	4.85	92,200	A.
July.....	968	644	806	2.26	2.61	49,600	A.
August.....	716	456	573	1.61	1.86	35,200	A.
September.....	628	432	484	1.36	1.52	28,800	A.
The year.....	2,620	379	800	2.25	30.58	581,000	
1912-13.							
October.....	474	398	420	1.18	1.36	25,800	A.
November.....	852	387	546	1.53	1.71	32,500	A.
December.....	788	398	460	1.29	1.49	28,300	A.
January.....	764	432	521	1.46	1.63	32,000	A.
February.....	652	382	490	1.38	1.44	27,200	A.
March.....	564	462	515	1.45	1.67	31,700	A.
April.....	1,680	574	1,120	3.15	3.52	66,600	A.
May.....	2,980	1,220	1,910	5.37	6.19	117,000	B.
June.....	3,120	1,480	2,150	6.04	6.74	128,000	B.
July.....	1,490	870	1,130	3.17	3.66	69,500	A.
August.....	894	599	717	2.01	2.32	44,100	A.
September.....	1,380	481	590	1.66	1.85	35,100	A.
The year.....	3,120	382	881	2.47	33.63	638,000	

Monthly discharge of Klickitat River near Glenwood—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acrc-feet.	
1913-14.							
October.....	640	456	535	1.50	1.73	32,900	A.
November.....	700	481	544	1.53	1.71	32,400	A.
December.....	538	391	441	1.24	1.43	27,100	A.
January.....	2,780	414	1,030	2.89	3.33	63,300	A.
February.....	710	575	602	1.69	1.76	33,400	A.
March.....	1,440	745	1,030	2.89	3.33	63,300	A.
April.....	2,740	924	1,840	5.17	5.77	109,000	A.
May.....	2,740	1,510	2,110	5.93	6.84	130,000	A.
June.....	1,820	980	1,240	3.48	3.88	73,800	A.
July.....	1,070	762	895	2.51	2.89	55,000	A.
August.....	770	557	625	1.76	2.03	38,400	A.
September.....	638	480	537	1.51	1.68	32,000	A.
The year.....	2,780	391	954	2.68	36.38	691,000	
1914-15.							
October.....	785	503	581	1.63	1.88	35,700	B.
November.....	1,280	600	754	2.12	2.36	44,900	A.
December.....	.....	441	491	1.38	1.59	30,200	C.
January.....	452	335	406	1.14	1.31	25,000	A.
February.....	463	370	406	1.14	1.19	22,500	A.
March.....	938	424	640	1.80	2.03	39,400	A.
April.....	2,100	1,160	1,440	4.04	4.51	85,700	B.
May.....	1,280	920	1,060	2.98	3.44	65,200	A.
June.....	965	602	745	2.09	2.33	44,300	A.
July.....	708	490	577	1.62	1.87	35,500	A.
August.....	563	460	505	1.42	1.64	31,100	A.
September.....	460	358	397	1.12	1.25	23,600	A.
The year.....	2,100	335	667	1.87	25.45	483,000	
1915-16.							
October.....	490	358	388	1.09	1.26	23,900	A.
November.....	532	315	414	1.16	1.29	24,600	A.
December.....	1,010	358	505	1.42	1.64	31,100	A.
January.....	.....	.....	399	1.12	1.29	24,500	C.
February.....	.....	.....	517	1.45	1.56	29,700	C.
March.....	1,750	508	1,070	3.01	3.47	65,800	A.
April.....	2,240	1,160	1,690	4.75	5.30	101,000	A.
May.....	3,400	1,460	2,250	6.32	7.29	138,000	C.
June.....	4,300	2,280	3,020	8.48	9.46	180,000	B.
July.....	3,670	1,340	2,300	6.46	7.45	141,000	A.
August.....	1,400	904	1,130	3.18	3.67	69,500	B.
September.....	904	640	719	2.02	2.25	42,800	A.
The year.....	4,300	315	1,200	3.37	45.93	872,000	
1916-17.							
October.....	628	540	576	1.62	1.87	35,400	A.
November.....	676	540	580	1.63	1.82	34,500	A.
December.....	524	404	472	1.33	1.53	29,000	A.
January.....	500	330	404	1.13	1.30	24,800	A.
February.....	464	386	437	1.23	1.28	24,300	A.
March.....	506	.....	377	1.06	1.22	23,200	A.
April.....	.....	398	569	1.60	1.78	33,900	A.
May.....	2,900	.....	1,770	4.97	5.73	109,000	B.
June.....	3,140	1,880	2,470	6.94	7.74	147,000	A.
July.....	2,090	904	1,460	4.10	4.73	89,800	A.
August.....	940	.....	807	2.27	2.62	49,600	B.
September.....	.....	494	578	1.62	1.81	34,400	B.
The year.....	3,140	330	877	2.46	33.43	635,000	
1917-18.							
October.....	506	425	461	1.29	1.49	28,300	A.
November.....	.....	375	406	1.14	1.27	24,200	B.
December.....	5,500	340	1,690	4.75	5.48	104,000	C.
January.....	.....	826	1,730	4.86	5.60	106,000	B.
February.....	1,310	752	966	2.71	2.82	53,600	A.
March.....	1,130	686	803	2.26	2.61	49,400	A.
April.....	1,670	992	1,260	3.54	3.95	75,000	A.
May.....	2,070	1,120	1,520	4.27	4.92	93,500	A.
June.....	2,000	938	1,440	4.04	4.51	85,700	A.
July.....	1,020	710	839	2.36	2.72	51,600	A.
August.....	734	575	630	1.77	2.04	38,700	A.
September.....	674	540	585	1.64	1.83	34,800	A.
The year.....	5,500	340	1,030	2.89	39.24	745,000	

Monthly discharge of Klickitat River near Glenwood—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1918-19.							
October.....	819	500	578	1.62	1.87	35,500	A.
November.....	615	525	568	1.60	1.78	33,800	B.
December.....	948	385	614	1.72	1.98	37,800	B.
January.....	4,100	365	1,120	3.15	3.63	68,900	B.
February.....		672	821	2.31	2.40	45,600	A.
March.....	1,030	651	781	2.19	2.52	48,000	B.
April.....	2,170	1,110	1,460	4.10	4.57	86,900	A.
May.....	2,710	1,640	2,010	5.65	6.51	124,000	A.
June.....	1,640	1,010	1,280	3.60	4.02	76,200	A.
July.....	1,050	702	877	2.46	2.84	53,900	A.
August.....	688	515	614	1.72	1.98	37,800	A.
September.....	515	445	472	1.33	1.48	28,100	A.
The year.....	4,100	365	934	2.62	35.58	676,000	

NOTE.—Maximum discharge during period of record, 6,250 second-feet Nov. 24, 1909; minimum discharge, 285 second-feet at 1 p. m. Nov. 13, 1915. Mean discharge for October, 1909, estimated by comparison with record of Klickitat River at Klickitat.

Yearly discharge of Klickitat River near Glenwood.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet
		Day.	Calendar month.					
			Mean.	Month.				
1910.....	6,250		435	Oct.....	1,160	3.31	45.12	842,000
1911.....	2,753	389	431	Feb.....	835	2.35	31.94	605,000
1912.....	2,620	379	417	Oct.....	800	2.25	30.58	581,000
1913.....	3,120	382	420	Oct.....	881	2.47	33.63	638,000
1914.....	2,780	391	441	Dec.....	954	2.68	36.38	691,000
1915.....	2,100	335	397	Sept.....	667	1.87	25.45	483,000
1916.....	4,300	315	388	Oct.....	1,200	3.37	45.93	872,000
1917.....	3,140	330	377	Mar.....	877	2.46	33.43	635,000
1918.....	5,550	340	406	Nov.....	1,030	2.89	39.24	745,000
1919.....	4,100	365	472	Sept.....	934	2.62	35.58	676,000
The period.	6,250	315	377	Mar., 1917	934	2.63	35.73	677,000

KLICKITAT RIVER BELOW GLENWOOD (166).

Staff gage in sec. 12, T. 5 N., R. 13 E., at county bridge on road between Glenwood and Goldendale, 11 miles southeast of Glenwood, in Klickitat County.

A small amount of water was diverted for irrigation near Glenwood.

Monthly discharge of Klickitat River below Glenwood.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1914.					
July 16-31.....	1,190	1,010	1,090	34,600	A.
August.....	1,060	850	929	57,100	A.
September.....	1,030	766	855	50,900	A.

Klickitat River at Klickitat (167).

Staff gage in sec. 23, T. 4 N., R. 13 E., just back of Klickitat post office, just below Snider Creek, and 14 miles, by river, above mouth, in Klickitat County.

Drainage area, 1,090 square miles; measured on Plate II, Water-Supply Paper 253.

Monthly discharge of Klickitat River at Klickitat.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1909.							
July 3-31.....	1,870	1,180	1,480	1.36	1.47	85,100	A.
August.....	1,200	900	1,030	.945	1.09	63,300	A.
September.....	930	778	847	.777	.87	50,400	A.
The period.....						199,000	
1909-10.							
October.....	832	742	777	.713	.82	47,800	B.
November.....	^a 10,000	778	2,760	2.53	2.82	164,000	B.
December.....	4,730	1,480	2,400	2.20	2.54	148,000	B.
January.....	8,100	1,240	2,670	2.45	2.82	164,000	C.
February.....	7,350	1,700	2,730	2.50	2.60	152,000	C.
March.....	10,200	3,600	6,110	5.61	6.47	376,000	C.
April.....	4,650	3,230	3,630	3.33	3.72	216,000	B.
May.....	4,200	2,540	3,140	2.88	3.32	193,000	A.
June.....	2,600	1,520	1,920	1.76	1.96	114,000	A.
July.....	1,520	1,130	1,320	1.21	1.40	81,200	A.
August.....	1,130	882	1,010	.927	1.07	62,100	A.
September.....	980	835	871	.799	.89	51,800	A.
The year.....	10,200	742	2,450	2.24	30.43	1,770,000	
1910-11.							
October.....	1,580	835	1,020	.936	1.08	62,700	A.
November.....	2,400	835	1,330	1.22	1.36	79,100	A.
December.....	2,400	1,130	1,520	1.39	1.60	93,500	A.
January.....	2,120	978	1,190	1.10	1.27	73,200	A.
February.....	1,620	810	1,050	.964	1.00	58,300	A.
March.....	3,290	810	1,960	1.80	2.08	121,000	A.
April.....	3,130	1,860	2,280	2.10	2.34	136,000	A.
May.....	2,970	2,120	2,430	2.23	2.57	149,000	A.
June.....	3,610	1,620	2,480	2.28	2.54	148,000	A.
July.....	1,620	1,020	1,280	1.17	1.35	78,700	A.
August.....	1,020	850	916	.840	.97	56,300	A.
September.....	1,200	770	885	.812	.91	52,700	A.
The year.....	3,610	770	1,530	1.40	19.07	1,110,000	
1911-12.							
October.....	850	695	753	.691	.80	46,300	A.
November.....	1,160	695	872	.800	.89	51,900	A.
December.....	850	695	766	.703	.81	47,100	A.
January.....	3,290	620	1,510	1.39	1.60	92,800	A.
The period.....						238,000	

^a Estimated.

Klickitat River near Lyle (168).

Staff gage from 1907 to 1910 at Wols Ferry, 5 miles by river above Lyle and mouth of river, in Klickitat County; in 1912 just below Silvias Creek, 1½ miles above Lyle and mouth.

Very little water was diverted for irrigation during the period of record.

Drainage area at upper site, about 1,130 square miles; at lower site about 1,150 square miles; measured on Plate II, Water-Supply Paper 253. Drainage area 1,140 square miles, as previously published for both sites, used without revision.

Monthly discharge of Klickitat River near Lyle.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907.							
May 27-31.....	3,520	3,170	3,340	2.93	0.54	33,100	B.
June.....	3,590	1,980	2,420	2.12	2.36	144,000	B.
July.....	1,910	1,380	1,570	1.38	1.59	96,500	B.
August.....	1,380	1,140	1,220	1.07	1.23	75,000	B.
September.....	1,140	975	1,040	.912	1.05	61,900	B.
The period.....						410,000	
1907-8.							
October.....	975	925	941	.825	.95	57,900	B.
November.....	1,910	875	1,020	.895	1.03	60,700	B.
December.....	4,850	1,020	1,670	1.46	1.68	103,000	B.
January.....	2,120	1,020	1,680	1.47	1.70	103,000	B.
February.....	1,840	975	1,470	1.29	1.39	84,600	B.
March.....	4,990	1,440	2,570	2.25	2.64	158,000	B.
April.....	4,150	1,980	2,790	2.45	2.73	166,000	B.
May.....	2,960	2,540	2,810	2.46	2.84	173,000	B.
June.....	3,450	1,980	2,640	2.32	2.59	157,000	B.
July.....	2,400	1,350	1,910	1.68	1.94	117,000	B.
The period.....						1,180,000	
1909.							
January 24-31.....	2,470	1,570	1,950	1.71	.51	30,900	B.
February.....	4,290	1,500	2,440	2.14	2.23	136,000	B.
March.....	2,890	1,980	2,380	2.09	2.41	146,000	B.
April.....	2,750	2,120	2,470	2.17	2.42	147,000	B.
May.....	3,310	2,400	2,760	2.42	2.79	170,000	B.
June.....	3,730	1,770	2,610	2.29	2.56	155,000	B.
July.....	1,840	1,250	1,540	1.35	1.56	94,700	B.
August.....	1,380	975	1,150	1.01	1.16	70,700	B.
September.....	1,080	875	974	.854	.95	58,000	B.
The period.....						1,010,000	
1909-10.							
October.....	925	875	880	.772	.89	54,100	B.
November.....	6,000	875	2,640	2.32	2.59	157,000	B.
December.....	4,730	1,380	2,510	2.20	2.54	154,000	B.
January.....	7,370	925	2,290	2.01	2.32	141,000	B.
February.....	6,600	2,330	2,860	2.51	2.61	159,000	B.
March.....	9,330	3,590	5,780	5.07	5.84	355,000	B.
April.....	4,220	2,820	3,340	2.93	3.27	199,000	B.
May.....	3,450	1,570	2,640	2.32	2.68	162,000	B.
June.....	2,190	1,380	1,860	1.63	1.82	111,000	B.
July.....	1,640	1,190	1,380	1.21	1.40	84,800	B.
August.....	1,190	1,020	1,100	.965	1.11	67,600	B.
September.....	1,020	925	998	.876	.98	59,400	B.
The year.....	9,330	875	2,350	2.06	28.05	1,700,000	
1912.							
February.....	6,720	1,700	2,950	2.59	2.79	170,000	B.
March.....	1,700	1,000	1,200	1.05	1.21	73,800	B.
April.....	2,200	1,450	1,720	1.51	1.68	102,000	B.
May.....	2,790	1,700	2,160	1.89	.91	55,700	B.
September 7-30.....	890	800	833	.731	.65	39,700	A.
October.....	890	770	797	.699	.81	49,000	A.
November.....	1,450	770	969	.850	.95	57,700	A.
December.....	3,320	800	1,080	.947	1.09	66,400	A.

PEARL CREEK NEAR GLENWOOD (169).

Staff gage a quarter of a mile above mouth and 26 miles north of Glenwood, in Yakima County.

Monthly discharge of Pearl Creek near Glenwood.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1916.					
August 24-31.....	3.4	2.5	2.86	45	B.
September.....	2.5	1.6	2.19	130	B.
October.....	1.7	.9	1.23	76	B.
November 1-9.....	1.5	1.2	1.29	23	B.
The period.....				274	

SWAMP CREEK NEAR GLENWOOD (170).

Staff gage a quarter of a mile above mouth and 21 miles north of Glenwood, in Yakima County.

Monthly discharge of Swamp Creek near Glenwood.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1916.					
September.....	8.4	6.7	7.65	455	C.
October.....	10.1	6.1	7.15	440	C.
November 1-9.....	10.5	8.1	8.97	160	C.
The period.....				1,060	

WEST FORK OF KLICKITAT RIVER NEAR GLENWOOD (171).

In 1910 just below junction of Little Muddy Creek and Fish Lake Stream; in 1916 at sheep bridge 1 mile above mouth and 20 miles north of Glenwood, in Yakima County. Staff gages used prior to September 15, 1916; water-stage recorder thereafter.

Drainage area, 83 square miles for station just below Little Muddy Creek; 90 square miles for station near mouth.

Monthly discharge of West Fork of Klickitat River near Glenwood.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910.							
June 17-30.....	524	390	458	5.52	2.87	12,700	C.
July.....	410	295	348	4.19	4.83	21,400	C.
August.....	314	276	295	3.55	4.09	18,100	C.
September.....	276	257	273	3.29	3.67	16,200	C.
October.....	371	257	298	3.59	4.14	18,300	C.
November.....	752	257	410	4.94	5.51	24,400	C.
The period.....						111,000	
1916.							
August 25-31.....	330	319	324			4,500	B.
September.....	319	277	293			17,400	B.
October.....	279	255	265			16,300	B.
November 1-9.....	299	260	277			4,940	C.
The period.....						43,100	

CUNNINGHAM CREEK NEAR GLENWOOD (172).

Staff gage 200 feet above trail crossing, 1 mile above mouth of creek, and 14 miles north of Glenwood in Yakima County.

Monthly discharge of Cunningham Creek near Glenwood.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1916.					
August 28-31	28	27	27.8	221	B.
September	27	22	24.2	1,440	B.
October	26	19	21.2	1,300	B.
November 1-9	22	19	19.9	355	B.
The period				3,320	

BIG MUDDY CREEK NEAR GLENWOOD (173).

Water-stage recorder prior to November 12, 1916, half a mile below Hellroaring Creek and 3 miles above mouth; thereafter just above mouth of Cougar Creek, half a mile above mouth of Muddy Creek and 9 miles north of Glenwood, in Yakima County.

Drainage area at upper site, 23 square miles; at lower site, not measured; at mouth 33 square miles; measured on Plate II, Water-Supply Paper 253.

Monthly discharge of Big Muddy Creek near Glenwood.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1916.					
August 28-31	312	216	260	2,060	C.
September	352	120	182	10,800	C.
1916-17.					
October	150	103	121	7,440	C.
November	120	69	92.4	5,500	C.
December			65	4,000	D.
January			55	3,380	D.
February			50	2,780	D.
March			45	2,770	D.
April	64	37	44.4	2,640	C.
May	184	59	119	7,320	C.
June	268	137	195	11,600	C.
July	306	220	259	15,900	C.
August	262	225	244	15,000	C.
September	225	158	194	11,500	C.
The year	306	37	124	89,800	
1917-18.					
October	168	69	115	7,070	C.
November	116	60	73.1	4,350	B.
December 1-8	69	60	64.6	1,020	C.
April			117	6,960	B.
May			131	8,060	B.
June			254	15,100	C.
July			258	15,900	B.
August			221	13,600	C.
September			200	11,900	D.

NOTE.—Maximum discharge during period of record occurred during flood of December, 1917, (discharge not determined); minimum discharge, 35 second-feet Apr. 3, 1917. Monthly mean discharge for December, 1916, to March, 1917, and for September, 1918, estimated by comparison with record of Klickitat River near Glenwood.

COUGAR CREEK NEAR GLENWOOD (174).

Staff gage 50 feet above trail crossing, 1½ miles above mouth, and 10 miles north of Glenwood, in Yakima County.

Monthly discharge of Cougar Creek near Glenwood.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1916.					
August 27-31.....	4.8	3.6	4.14	41	C.
September.....	4.1	1.8	2.43	145	C.
October.....	2.2	1.5	1.61	99	C.
November 1-9.....	2.4	1.7	2.01	36	C.
The period.....				321	

DAIRY CREEK NEAR GLENWOOD (175).

Staff gage near mouth, 6 miles north of Glenwood, in Yakima County.

Monthly discharge of Dairy Creek near Glenwood.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1916.					
August 30-31.....	3.41	3.41	3.41	13.5	A.
September.....	3.33	2.50	2.91	173	A.
October.....	3.17	2.21	2.35	144	A.
November 1-10.....	4.95	2.43	3.68	73.0	A.
The period.....				404	

NOTE.—This record not previously published.

LITTLE KLICKITAT RIVER NEAR GOLDENDALE (176).

Staff gage in sec. 10, T. 4 N., R. 16 E., at highway bridge at Hanging Rock ranch, 2½ miles above Goldendale, in Klickitat County.

Monthly discharge of Little Klickitat River near Goldendale.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1910-11.					
October.....	33	9	12.0	690	C.
November.....	76	12	31.2	1,860	B.
December.....	152	23	65.6	4,030	A.
January.....	159	33	61.4	3,780	A.
February.....	78	23	38.1	2,120	A.
March.....	216	28	132	8,120	A.
April.....	164	49	76.8	4,570	A.
May.....	70	40	52.7	3,240	B.
June.....	61	19	34.8	2,070	C.
July.....	18	1.5	6.77	416	D.
August.....			1.5	92.2	D.
September.....	8.2	2.4	4.64	276	B.
The year.....	216		43.2	31,300	
1911-12.					
October.....	6.9	4.8	5.29	325	B.
November.....	14	7.2	11.0	655	B.
December.....	12	9.0	9.85	606	B.
January.....	270	28	104	6,400	C.
February.....	524	90	207	11,900	B.
March.....	96	43	63.4	3,900	A.
April.....	163	72	111	6,600	A.
May.....	90	56	76.5	4,700	A.
June.....	61	9.5	30.3	1,800	A.
The period.....				36,900	

WHITE SALMON RIVER BASIN.

WHITE SALMON RIVER NEAR GULER (177).

Chain gage at highway bridge a quarter of a mile above intake of Huber ditch, three-fourths mile below Trout Creek, and 3 miles southeast of Guler, in Klickitat County.

Monthly discharge of White Salmon River near Guler.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1918.					
July 17-31.....	405	185	225	6,690	B.
August 1-30.....	196	149	172	10,200	B.
September 7-30.....	185	122	140	6,660	B.

WHITE SALMON RIVER AT SPLASH DAM, NEAR TROUT LAKE (178).

Staff gage at splash dam 2½ miles south of Trout Lake post office, 4 miles below Trout Creek, and 10 miles north of Husum, in Klickitat County.

A considerable amount of water is diverted above the station for irrigation. Flow affected occasionally, prior to 1914, by operation of dam.

Drainage area, 256 square miles, measured on Plate XI, Water-Supply Paper 253.

Monthly discharge of White Salmon River at splash dam, near Trout Lake.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1912.					
June.....	448	250	368	21,900	A.
July.....	276	133	190	11,700	A.
August.....	280	128	174	10,700	A.
September.....	285	170	206	12,300	A.
The period.....				56,600	
1912-13.					
October.....	315	160	203	12,500	A.
November.....	a 1,500	198	558	33,200	B.
December.....	775	235	316	19,400	A.
January.....	740	275	411	25,300	A.
February.....	435	220	288	16,000	A.
March.....	575	255	335	20,600	A.
April.....	810	435	622	37,000	A.
May.....	1,060	605	897	55,200	B.
June.....	1,240	635	965	57,400	B.
July.....	635	235	416	25,600	A.
August.....	275	205	230	14,100	A.
September.....	930	190	271	16,100	A.
The year.....	a 1,500	160	459	332,000	
1913-14.					
October.....	315	190	227	14,000	A.
November.....	740	198	368	21,900	A.
December.....	460	220	293	18,000	A.
January.....	a 2,000	235	764	47,000	B.
February.....	635	275	380	21,000	A.
March.....	930	575	703	43,200	A.
April.....	1,540	515	943	56,100	A.
May.....	1,090	605	870	53,500	A.
June.....	670	315	445	26,500	A.
July.....	315	160	234	14,400	A.
August.....	190	152	170	10,500	A.
September.....	335	152	208	12,400	A.
The year.....	a 2,000	152	468	339,000	

a Estimated from records at Husum.

Monthly discharge of White Salmon River at splash dam, near Trout Lake—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1914-15.					
October.....	740	190	303	18,600	A.
November.....	1,050	360	554	33,000	A.
December.....	360	198	275	16,900	A.
January.....	275	168	220	13,500	A.
February.....	335	190	216	12,000	A.
March.....	890	255	538	33,100	A.
April.....	2,140	635	1,110	66,000	B.
May.....	705	410	519	31,900	B.
June.....	385	85	165	9,820	B.
July.....	126	59	97.1	5,970	B.
August.....	76	55	63.1	3,880	B.
September.....	80	56	69.6	4,140	B.
The year.....	2,140	55	344	248,000	
1915-16.					
October.....	161	67	85.2	5,240	B.
November.....	492	111	201	12,000	B.
December.....	1,440	172	398	24,500	B.
January.....	720		276	17,000	D.
February.....			473	27,200	C.
March.....	1,320	357	782	48,100	B.
April.....	1,240	875	1,070	63,700	B.
May.....	1,640	945	1,190	73,200	B.
June.....	1,840	1,100	1,310	78,000	B.
July.....	1,640	467	962	59,200	B.
August.....	443	190	250	15,400	B.
September.....	228	156	177	10,500	B.
The year.....	1,840	67	598	434,000	
1916-17.					
October.....	230	135	155	9,530	B.
November.....	365	160	202	12,000	B.
December.....	215	117	157	9,650	B.
January.....	208	123	154	9,470	B.
February.....	186	135	164	9,110	B.
March.....	265	125	149	9,160	C.
April.....	700	173	400	23,800	C.
May.....	1,340	575	957	58,800	B.
June.....	1,260	810	964	57,400	B.
July.....	810	202	496	30,500	B.
August.....	202	158	175	10,800	A.
September.....	178	158	169	10,100	A.
The year.....	1,340	117	345	250,000	

NOTE.—Maximum discharge during period of record, 2,160 second-feet Apr. 3, 1915; minimum discharge 52 second-feet Aug. 1, 4-6, 1915.

Yearly discharge of White Salmon River at splash dam, near Trout Lake.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1913.....	1,500	160	203	Oct.....	459	332,000
1914.....	2,000	152	170	Aug.....	468	339,000
1915.....	2,140	55	63.1	Aug.....	344	248,000
1916.....	1,840	67	85.2	Oct.....	598	434,000
1917.....	1,340	117	149	Mar.....	345	250,000
The period.....	2,140	55	63.1	Aug., 1915.	443	321,000

WHITE SALMON RIVER AT HUSUM (179).

Gage 1,000 feet above falls and power plant at Husum and three-fourths mile above Rattlesnake Creek in Klickitat County.

A considerable amount of water is diverted above the station for irrigation. Flow affected occasionally, prior to 1914, by operation of splash dam 10 miles upstream.

Drainage area, 300 square miles; measured on Plate XI, Water-Supply Paper 253.

Monthly discharge of White Salmon River at Husum.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909-10.					
October.....	650	496	568	34,900	B.
November.....	4,340	620	1,730	103,000	B.
December.....	2,610	908	1,220	75,000	B.
January.....	1,620	785	1,010	62,100	A.
February.....	1,620	818	1,010	56,100	A.
March.....	3,410	1,500	2,110	130,000	A.
April.....	2,080	1,420	1,750	104,000	A.
May.....	2,000	1,460	1,740	107,000	A.
June.....	1,420	1,080	1,220	72,600	A.
July.....	1,050	755	917	56,400	A.
August.....	755	645	685	42,100	A.
September.....	620	570	608	36,200	A.
The year.....	4,340	496	1,220	879,000	
1910-11.					
October.....	980	545	614	37,800	A.
November.....	2,840	520	1,120	66,600	A.
December.....	1,500	883	1,100	67,600	A.
January.....	1,050	850	919	56,500	A.
February.....	980	785	876	48,700	A.
March.....	1,200	785	900	55,300	A.
April.....	1,500	1,140	1,300	77,400	B.
May.....	2,140	1,160	1,410	86,700	B.
June.....	1,820	1,110	1,450	86,300	B.
July.....	1,030	655	782	48,100	B.
August.....	670	615	654	40,200	B.
September.....	785	570	646	38,400	A.
The year.....	2,840	520	980	710,000	
1911-12.					
October.....	670	475	513	31,500	A.
November.....	1,200	475	733	43,600	A.
December.....	670	520	596	36,600	A.
January.....	1,910	452	1,040	64,000	A.
February.....	2,710	1,200	1,720	98,900	A.
March.....	1,120	915	986	60,600	A.
April.....	1,420	980	1,160	69,000	B.
May.....	1,800	1,160	1,450	89,200	B.
June.....	1,820	915	1,230	73,200	B.
July.....	1,050	620	805	49,500	A.
August.....	725	620	640	39,400	A.
September.....	785	520	603	35,900	A.
The year.....	2,710	452	952	691,000	
1912-13.					
October.....	645	484	533	32,800	A.
November.....	1,800	511	820	48,800	B.
December.....	1,550	545	709	43,600	B.
January.....	1,440	775	953	58,600	A.
February.....	1,080	740	864	48,000	A.
March.....	1,350	775	907	55,800	A.
April.....	1,530	1,140	1,340	79,700	A.
May.....	1,930	1,260	1,620	99,600	A.
June.....	2,070	1,350	1,610	95,800	A.
July.....	1,410	890	1,100	67,600	A.
August.....	965	760	853	52,400	A.
September.....	1,350	652	755	44,900	A.
The year.....	2,070	484	1,010	728,000	

Monthly discharge of White Salmon River at Husum—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1913-14.					
October.....	770	585	656	40,300	B.
November.....	1,070	585	750	44,600	C.
December.....	870	585	660	40,600	B.
January.....	2,360	630	1,250	76,900	B.
February.....	1,220	820	949	52,700	B.
March.....	1,440	1,120	1,260	77,500	B.
April.....	1,820	1,120	1,430	85,100	B.
May.....	1,490	1,170	1,370	84,200	B.
June.....	1,270	970	1,070	63,700	B.
July.....	970	770	870	53,500	B.
August.....	770	675	717	44,100	B.
September.....	770	630	678	40,300	B.
The year.....	2,360	585	973	704,000	
1914-15.					
October.....	1,020	630	712	43,800	B.
November.....	1,320	720	883	52,500	B.
December.....	770	585	628	38,600	C.
January.....	630	495	590	36,300	B.
February.....	870	555	642	35,700	B.
March.....	1,620	770	1,060	65,200	B.
April.....	2,260	1,080	1,430	85,100	B.
May.....	1,400	970	1,040	64,000	B.
June.....	970	675	760	45,200	A.
July.....	720	540	637	39,200	.
August.....	630	540	560	34,400	A.
September.....	540	450	508	30,200	A.
The year.....	2,260	450	788	570,000	
1915-16.					
October.....	518	450	479	29,500	A.
November.....	870	450	602	35,800	A.
December.....	2,180	585	902	55,500	A.
January.....	1,080	585	706	43,400	B.
February.....	1,470	675	1,070	61,600	B.
March.....	2,440	970	1,600	98,400	B.
April.....	2,180	1,620	1,820	108,000	B.
May.....	2,620	1,700	1,990	122,000	B.
June.....	3,200	1,940	2,230	133,000	B.
July.....	2,800	1,300	1,860	114,000	A.
August.....	1,330	1,080	1,150	70,700	A.
September.....	1,020	870	927	55,200	A.
The year.....	3,200	450	1,280	927,000	
1916-17.					
October.....	820	675	731	44,900	A.
November.....	990	630	704	41,900	A.
December.....	720	565	630	38,700	A.
January.....	675	545	591	36,300	A.
February.....	630	565	607	33,700	A.
March.....	930	545	613	37,700	A.
April.....	1,300	720	983	58,500	A.
May.....	2,220	1,110	1,560	95,900	B.
June.....	2,060	1,440	1,740	104,000	B.
July.....	1,740	990	1,310	80,600	A.
August.....	990	820	888	54,600	A.
September.....	820	630	751	44,700	A.
The year.....	2,220	545	927	672,000	
1917-18.					
October.....	675	565	606	37,300	A.
November.....	630	505	551	32,800	B.
December.....	7,220	505	2,280	140,000	B.
January.....	3,980	1,420	2,080	128,000	B.
February.....	2,320	1,270	1,580	87,800	A.
March.....	1,580	1,070	1,220	75,000	A.
April.....	1,420	1,130	1,250	74,400	A.
May.....	1,270	840	1,040	64,000	A.
June.....	890	790	835	49,700	A.
July.....	790	672	743	45,700	B.
August.....	672	.....	598	36,800	B.
September.....	605	545	573	34,100	A.
The period.....	7,220	505	1,110	806,000	

Monthly discharge of White Salmon River at Husum—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1918-19.					
October.....	880	525	589	36,200	A.
November.....	^a 1,220	^a 520	^a 650	38,700	B.
December.....	^a 1,460	^a 540	^a 792	48,700	C.
January.....	4,800	580	1,390	85,500	B.
February.....	1,290	1,150	1,200	66,600	B.
March.....	1,520	1,150	1,250	76,900	B.
April.....	1,680	^a 1,000	^a 1,360	80,900	B.
May.....	^a 1,620	^a 1,210	^a 1,370	84,200	B.
June.....	^a 1,230	^a 870	^a 1,030	61,300	B.
July.....	1,020	790	887	54,500	B.
August.....	790	620	729	45,400	B.
September.....	700	500	621	37,000	B.
The year.....	4,800	500	989	716,000	

^a Estimated by comparison with record of White Salmon River near Underwood.

NOTE.—Maximum discharge during period of record, 7,500 second-feet at 4 p. m. Dec. 29, 1917; minimum discharge, 432 second-feet at 2 p. m. Sept. 30, 1915.

Yearly discharge of White Salmon River at Husum.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1910.....	4,340	496	568	Oct.....	1,220	879,000
1911.....	2,840	520	614	Oct.....	980	710,000
1912.....	2,710	452	513	Oct.....	952	691,000
1913.....	2,070	484	533	Oct.....	1,010	728,000
1914.....	2,360	585	656	Oct.....	973	704,000
1915.....	2,260	450	508	Sept.....	788	570,000
1916.....	3,200	450	479	Oct.....	1,280	927,000
1917.....	2,220	545	591	Jan.....	927	672,000
1918.....	7,220	505	551	Nov.....	1,110	806,000
1919.....	4,800	500	589	Oct.....	989	716,000
The period.....	7,220	450	479	Oct., 1915..	1,020	740,000

WHITE SALMON RIVER NEAR UNDERWOOD (180).

In 1912-13 at Conduit dam, 3 miles above mouth of river; beginning in 1915 just below Northwestern Electric Co.'s power plant, 2 miles above Underwood and mouth of river in Klickitat County. Reference point used at upper site; water-stage recorder at lower site.

A considerable amount of water is diverted above the station for irrigation. At low and medium stages practically all the water is used through the wheels of the power plant. The pond above the dam covers about 80 acres and is drawn down 6 or 8 feet at times. Daily discharge has been corrected for pondage for practically all days when discharge was less than 1,000 second-feet.

Monthly discharge of White Salmon River near Underwood.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1912-13.					
October 18-31.....	718	568	643	17,900	A.
November.....	1,520	588	906	53,900	A.
December.....	1,590	658	820	50,400	A.
January.....	1,390	908	1,110	68,200	A.
February 1-26.....	1,260	888	1,040	41,400	A.
The period.....				232,000	
1915.					
March.....	1,600	920	1,230	75,600	B.
April.....	3,000	1,350	1,610	95,800	B.
May.....	1,280	1,040	1,140	70,100	B.
June.....	1,050	725	812	48,300	B.
July.....	770	590	687	42,200	B.
August.....	680	568	596	36,600	B.
September.....	606	522	557	33,100	B.
The period.....				402,000	
1915-16.					
October.....	584	469	517	31,800	B.
November.....	1,120	492	668	39,700	B.
December.....	2,920	658	1,110	68,200	C.
January.....	1,430	735	874	53,700	C.
February.....	1,960	825	1,400	80,500	C.
March.....	3,570	1,390	2,360	145,000	B.
April.....	2,490	2,040	2,310	137,000	B.
May.....	2,870	1,910	2,210	136,000	B.
June.....	3,300	2,030	2,340	139,000	B.
July.....	2,800	1,340	1,910	117,000	B.
August.....	1,400	1,020	1,220	75,000	B.
September.....	1,120	858	1,000	59,500	B.
The year.....	3,570	469	1,490	1,080,000	
1916-17.					
October.....	889	702	775	47,700	B.
November.....	1,030	572	719	42,800	B.
December.....	901	608	716	44,000	B.
January.....	956	624	744	45,700	B.
February.....	1,240	644	757	42,000	B.
March.....	1,440	632	821	50,500	B.
April.....	1,630	1,120	1,370	81,500	B.
May.....	2,030	1,370	1,720	106,000	B.
June.....	2,130	1,560	1,840	109,000	B.
July.....	1,750	1,070	1,340	82,400	B.
August.....	1,070	890	964	59,300	B.
September.....	974	702	816	48,600	B.
The year.....	2,130	572	1,050	760,000	
1917-18.					
October.....	716	564	645	39,700	B.
November.....	710	498	576	34,300	B.
December.....	9,200	504	2,980	183,000	C.
January.....	5,310	1,390	2,780	171,000	C.
February.....	3,090	1,690	2,110	117,000	C.
March.....	2,110	1,430	1,630	100,000	C.
April.....	1,470	1,230	1,370	81,500	B.
May.....	1,390	900	1,140	70,100	B.
June.....	996	842	918	54,600	A.
July.....	954	726	817	50,200	A.
August.....	785	592	651	40,000	A.
September.....	682	568	620	36,900	A.
The year.....	9,200	498	1,350	978,000	

Monthly discharge of White Salmon River near Underwood—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1918-19.					
October.....	928	561	633	38,900	A.
November.....	1,270	573	706	42,000	A.
December.....	1,540	589	865	53,200	A.
January.....	5,010	600	1,510	92,800	B.
February.....	1,490	1,220	1,330	73,900	A.
March.....	2,040	1,350	1,570	96,500	A.
April.....	1,980	1,340	1,660	98,800	A.
May.....	1,820	1,340	1,530	94,100	A.
June.....	1,370	950	1,140	67,800	A.
July.....	1,030	840	933	57,400	A.
August.....	826	718	774	47,600	A.
September.....	808	613	700	41,700	A.
The year.....	5,010	561	1,110	805,000	

NOTE.—Maximum discharge during period of record, 9,700 second-feet Dec. 29, 1917; minimum discharge, 469 second-feet (corrected for pondage) Oct. 17, 1915. Monthly discharge beginning in 1915 revised in this report. Daily discharge corrected for pondage for practically all days when discharge was less than 1,000 second-feet. Daily discharge estimated during breaks in record from record of White Salmon River at Husum.

TROUT CREEK AT GULER (181).

Staff gage 500 feet below highway bridge at Guler, in Klickitat County.

Drainage area, 82 square miles; measured on Plate XI, Water-Supply Paper 253.

Monthly discharge of Trout Creek at Guler.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1909.					
September 16-30.....	76	48	55.8	1,660	A.
1909-10.					
October.....	142	48	71.9	4,420	A.
November.....	1,540	206	729	43,400	B.
December.....	1,470	280	602	37,000	B.
January.....	650	189	425	26,100	C.
February.....	737	157	253	14,100	B.
March.....	1,060	414	642	39,500	B.
April.....	737	568	638	38,000	B.
May.....	650	414	543	33,400	B.
June.....	438	115	254	15,100	B.
July.....	115	56	86.6	5,320	B.
August.....	56	48	52.8	3,250	B.
September.....	49	46	47.4	2,820	B.
The year.....	1,540	46	362	262,000	
1910-11.					
October.....	92	49	72.4	4,450	B.
November.....	1,130	62	435	25,900	C.
December.....	489	390	447	27,500	D.
January.....	242	115	148	9,100	D.
February.....	157	142	145	8,050	C.
March.....	321	157	245	15,100	B.
April.....	463	300	388	23,100	B.
May.....	768	463	671	41,300	B.
June.....	707	173	377	22,400	B.
July.....	181	60	116	7,130	B.
August.....	66	46	53.2	3,270	B.
September.....	109	46	73.3	4,360	B.
The year.....	1,130	46	265	192,000	
1911.					
October.....	66	46	55.0	3,380	B.

LEWIS RIVER BASIN.

LEWIS RIVER ABOVE MUDDY RIVER, NEAR COUGAR (182).

Staff gage $1\frac{1}{2}$ miles above Muddy River, 18 miles above Peterson ranch, and 23 miles above Cougar, in Skamania County.

Drainage area, 250 square miles; measured on Plate XIII, Water-Supply Paper 253.

Monthly discharge of Lewis River above Muddy River, near Cougar.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Mean per square mile.	Inches.	Acre-feet.	
1909.							
August.....	500	295	380	1.52	1.75	23,400	D.
September.....	350	160	225	.90	1.00	13,400	D.
October.....	595	160	265	1.06	1.22	16,300	D.
The period.....	500	160	290	1.16	3.97	53,100	

LEWIS RIVER AT PETERSON RANCH, NEAR COUGAR (183).

Staff gage 1,000 feet above Swift Creek, 2 miles above Peterson ranch, and 7 miles above Cougar, in Skamania County.

Drainage area, 474 square miles; measured on Plate XIII, Water-Supply Paper 253.

Monthly discharge of Lewis River at Peterson ranch, near Cougar.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Mean per square mile.	Inches.	Acre-feet.	
1909.							
August.....	1,110	645	804	1.70	1.96	49,400	B.
September.....	778	560	604	1.28	1.43	35,900	B.
October.....	1,320	510	712	1.50	1.73	43,800	B.
The period.....						129,000	

LEWIS RIVER NEAR AMBOY (184).

Staff gage at Cresaps ferry, $1\frac{1}{2}$ miles below Canyon Creek, 2 miles above Speilei Creek, and 5 miles northwest of Amboy, in Clarke County.

Drainage area, 665 square miles; measured on Plate XIII, Water-Supply Paper 253.

Monthly discharge of Lewis River near Amboy.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Mean per square mile.	Inches.	Acre-feet.	
1911.							
January 21-31.....	2,780	1,790	2,200	3.31	1.35	48,000	B.
February.....	2,780	1,300	1,720	2.59	2.70	95,500	B.
March.....	5,850	1,250	3,110	4.68	5.40	191,000	A.
April.....	5,600	2,620	3,780	5.68	6.34	225,000	A.
May.....	11,400	4,200	6,410	9.64	11.11	394,000	A.
June.....	7,430	2,470	4,060	6.11	6.82	242,000	A.
July.....	2,470	990	1,590	2.39	2.76	97,800	A.
August.....	990	700	853	1.28	1.48	52,400	B.
September.....	3,110	770	1,210	1.82	2.03	72,000	A.
The period.....						1,420,000	

Monthly discharge of Lewis River near Amboy—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Mean per square mile.	Inches.	Acre-feet.	
1911-12.							
October.....	1,250	840	1,030	1.55	1.79	63,300	A.
November.....	13,800	875	4,950	7.44	8.30	295,000	A.
December.....	5,600	2,470	3,700	5.56	6.41	228,000	A.
January.....	22,300	1,910	7,430	11.2	12.91	457,000	A.
February.....	14,100	3,450	7,640	11.5	12.40	439,000	A.
March.....	3,110	2,040	2,510	3.77	4.35	154,000	A.
April.....	4,880	2,780	3,370	5.07	5.66	201,000	A.
May.....	8,300	4,000	5,580	8.39	9.67	343,000	A.
June.....	4,420	1,910	3,450	5.19	5.79	205,000	A.
July.....	2,180	1,350	1,700	2.56	2.95	105,000	A.
August.....	4,650	990	1,560	2.35	2.71	95,900	A.
September.....	4,420	1,250	2,390	3.59	4.00	142,000	A.
The year.....	22,300	840	3,760	5.65	76.94	2,730,000	
1912-13.							
October.....	4,880	990	2,390	3.59	4.14	147,000	A.
November.....	21,100	2,780	7,860	11.8	13.17	468,000	A.
December.....	12,100	2,780	4,490	6.75	7.78	276,000	A.
January.....	15,500	2,620	5,370	8.08	9.32	330,000	A.
February.....	9,530	2,470	3,870	5.82	6.06	215,000	A.
March.....	9,530	2,620	4,380	6.59	7.60	269,000	A.
April.....	7,710	4,650	6,160	9.26	10.33	367,000	A.
May.....	9,220	4,000	6,740	10.1	11.64	414,000	A.
June.....	9,530	4,200	6,190	9.31	10.39	368,000	A.
July.....	4,650	1,910	3,000	4.51	5.20	184,000	A.
August.....	2,180	1,450	1,780	2.68	3.09	109,000	B.
September.....	8,300	1,350	2,210	3.32	3.70	132,000	B.
The year.....	21,100	990	4,530	6.81	92.42	3,280,000	
1913-14.							
October.....	5,120	1,450	2,610	3.92	4.52	160,000	B.
November.....	14,400	2,040	5,450	8.20	9.15	324,000	A.
December.....	7,710	2,470	3,610	5.43	6.26	222,000	A.
January.....	34,100	3,630	10,300	15.5	17.87	633,000	B.
February.....	10,200	3,110	5,220	7.85	8.17	290,000	A.
March.....	11,800	4,200	6,240	9.38	10.81	384,000	A.
April.....	12,100	3,810	6,420	9.65	10.77	382,000	A.
May.....	7,160	3,810	5,500	8.27	9.53	338,000	A.
June.....	4,880	2,620	3,320	4.99	5.57	198,000	A.
July.....	2,620	1,350	1,740	2.62	3.02	107,000	A.
August.....	1,350	990	1,150	1.73	1.99	70,700	A.
September.....	5,120	910	1,750	2.63	2.93	104,000	A.
The year.....	34,100	910	4,440	6.68	90.59	3,210,000	
1914-15.							
October.....	12,700	1,560	3,490	5.25	6.05	215,000	A.
November.....	12,700	3,450	5,920	8.90	9.93	352,000	A.
December.....	4,200	1,670	2,560	3.85	4.44	157,000	A.
January.....	6,890	2,040	3,850	5.79	6.68	237,000	A.
February.....	6,360	2,620	3,830	5.76	6.00	213,000	A.
March.....	7,430	2,780	4,390	6.60	7.61	270,000	A.
April.....	15,200	2,620	5,440	8.18	9.13	324,000	A.
May.....	6,890	2,180	3,050	4.59	5.29	188,000	A.
June.....	3,810	1,450	2,010	3.02	3.37	120,000	A.
July.....	1,560	1,120	1,280	1.93	2.22	78,700	A.
August.....	1,070	805	918	1.38	1.59	56,400	A.
September.....	840	686	769	1.16	1.29	45,800	B.
The year.....	15,200	686	3,120	4.69	63.60	2,260,000	
1915-16.							
October.....	4,650	735	1,340	2.02	2.33	82,400	A.
November.....	15,500	1,790	6,170	9.28	10.35	367,000	A.
December.....	23,900	3,450	7,920	11.9	13.72	487,000	A.
January.....	9,220	1,450	3,550	5.34	6.16	218,000	A.
February.....	19,900	2,180	7,700	11.6	12.51	443,000	A.
March.....	23,900	4,200	9,130	13.7	15.79	561,000	B.
April.....	10,500	5,850	7,110	10.7	11.94	423,000	B.
May.....	11,100	5,360	7,450	11.2	12.91	458,000	B.
June.....	11,400	4,200	7,410	11.2	12.50	441,000	B.
July.....	12,400	2,940	5,500	8.27	9.53	338,000	A.
August.....	3,110	1,560	2,160	3.25	3.75	133,000	A.
September.....	1,910	1,070	1,340	2.02	2.25	79,700	A.
The year.....	23,900	735	5,550	8.35	113.74	4,030,000	

Monthly discharge of Lewis River near Amboy—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1916-17.							
October.....	1,350	840	969	1.46	1.68	59,600	A.
November.....	11,100	1,450	3,840	5.77	6.44	228,000	A.
December.....	7,710	1,790	3,370	5.07	5.84	207,000	A.
January.....	10,200	1,910	3,570	5.37	6.19	220,000	A.
February.....	5,120	2,040	3,350	5.04	5.25	186,000	A.
March.....	8,910	1,790	2,710	4.08	4.70	167,000	A.
April.....	10,500	3,810	6,640	9.98	11.14	395,000	A.
May.....	10,200	5,600	7,430	11.2	12.91	457,000	A.
June.....	10,200	6,100	7,900	11.9	13.28	470,000	A.
July.....	6,890	1,790	4,000	6.02	6.94	246,000	A.
August.....	1,670	1,070	1,320	1.98	2.28	81,200	A.
September.....	1,250	910	1,060	1.59	1.77	63,100	A.
The year.....	11,100	840	3,840	5.77	78.42	2,780,000	
1917-18.							
October.....	1,120	735	852	1.28	1.48	52,400	A.
November.....	2,470	770	1,080	1.62	1.81	64,300	A.
December.....	52,500	2,470	16,600	25.0	28.82	1,020,000	C.
January.....	27,900	4,650	9,810	14.8	17.06	603,000	B.
February.....	16,200	2,840	6,460	9.71	10.11	359,000	B.
March.....	12,700	2,520	5,140	7.73	8.91	316,000	B.
April.....	6,890	4,200	5,100	7.67	8.56	303,000	B.
May.....	5,120	2,520	3,410	5.13	5.91	210,000	B.
June.....	2,680	1,330	1,980	2.98	3.32	118,000	B.
July.....	1,330	960	1,190	1.79	2.06	73,200	C.
August.....	1,140	880	979	1.47	1.70	60,200	A.
September.....	960	730	805	1.21	1.35	47,900	A.
The year.....	52,500	730	4,460	6.71	91.09	3,230,000	
1918-19.							
October.....	6,620	800	1,420	2.14	2.47	87,300	A.
November.....	10,800	1,940	4,080	6.14	6.85	243,000	A.
December.....	24,700	2,360	6,610	9.94	11.46	406,000	B.
January.....	34,600	1,660	8,580	12.90	14.87	528,000	B.
February.....	8,000	3,300	4,680	7.04	7.33	260,000	B.
March.....	10,500	3,300	5,200	7.82	9.02	320,000	B.
April.....	11,400	2,920	7,240	10.89	12.15	431,000	B.
May.....	10,200	5,000	6,340	9.53	10.99	390,000	B.
June.....	5,220	2,920	4,230	6.36	7.10	252,000	B.
July.....	2,920	1,490	2,190	3.29	3.79	135,000	B.
August.....	1,490	1,100	1,250	1.88	2.17	76,900	B.
September.....	1,860	1,020	1,160	1.74	1.94	69,000	A.
The year.....	34,600	800	4,420	6.65	90.14	3,200,000	

NOTE.—Maximum discharge during period of record, 60,000 second-feet Dec. 18, 1917; minimum discharge, 686 second-feet Sept. 30, 1915.

Yearly discharge of Lewis River near Amboy.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1912.....	22,300	840	1,030	Oct.....	3,760	5.65	76.94	2,730,000
1913.....	21,100	990	1,780	Aug.....	4,530	6.81	92.42	3,280,000
1914.....	34,100	910	1,150	Aug.....	4,440	6.68	90.59	3,210,000
1915.....	15,200	686	769	Sept.....	3,120	4.69	63.60	2,260,000
1916.....	23,900	735	1,340	Oct.,Sept.	5,550	8.35	113.74	4,030,000
1917.....	11,100	840	969	Oct.....	3,840	5.77	78.42	2,780,000
1918.....	52,500	730	805	Sept.....	4,460	6.71	91.09	3,230,000
1919.....	34,600	800	1,160	Sept.....	4,420	6.65	90.14	3,200,000
The period.	52,500	686	769	Sept.,1915	4,260	6.41	87.12	3,090,000

LEWIS RIVER AT ARIEL (185).

Staff gage at Ariel, a quarter of a mile above George Creek, in Cowlitz County.
Drainage area, 728 square miles; measured on Plate XIII, Water-Supply Paper 253.

Monthly discharge of Lewis River at Ariel.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Mean per square mile.	Inches.	Acre-feet.	
1909.							
August.....	1,870	1,030	1,400	1.52	1.75	86,100	C.
September.....	1,650	960	1,110	1.92	2.21	66,000	C.
October.....	3,070	960	1,510	2.07	2.39	92,800	C.
The period.....						245,000	

MUDDY RIVER NEAR COUGAR (186).

Staff gage half a mile above mouth of river and 14 miles east of Cougar, in Skamania County.

Drainage area, 121 square miles; measured on Plate XII, Water-Supply Paper 253.

Monthly discharge of Muddy River near Cougar.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Mean per square mile.	Inches.	Acre-feet.	
1909.							
August.....	315	220	274	2.26	2.61	16,800	D.
September.....	242	142	182	1.50	1.67	10,800	D.
October.....	400	142	236	1.95	2.25	14,500	D.
The period.....						42,100	

PINE CREEK NEAR COUGAR (187).

Staff gage a quarter of a mile above mouth of creek and 13 miles east of Cougar, in Skamania County.

Drainage area, 21 square miles; measured on Plate XIII, Water-Supply Paper 253.

Monthly discharge of Pine Creek near Cougar.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Mean per square mile.	Inches.	Acre-feet.	
1909.							
August.....	142	138	140	6.67	7.69	8,610	D.
September.....	155	136	140	6.67	7.44	8,330	D.
October.....	155	136	141	6.71	7.74	8,670	D.
The period.....						25,600	

SWIFT CREEK NEAR COUGAR (188).

Staff gage a quarter of a mile above mouth and 4½ miles east of Cougar, in Skamania County.

Drainage area, 26 square miles; measured on Plate XII, Water-Supply Paper 253.

Monthly discharge of Swift Creek near Cougar.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Mean per square mile.	Inches.	Acre-feet.	
1909.							
August.....	179	167	173	6.65	7.67	10,600	D.
September.....	167	167	167	6.42	7.16	9,940	D.
October.....	169	167	172	6.61	7.62	10,600	D.
The period.....						31,100	

KALAMA RIVER BASIN.

KALAMA RIVER NEAR KALAMA (189).

Staff gage in sec. 7, T. 6 N., R. 1 E., 150 feet below power plant of North Coast Power Co. and 9 miles by road east of Kalama, in Cowlitz County.

Operation of power plant causes some fluctuation, but gage is read only at times when load is steady.

Monthly discharge of Kalama River near Kalama, Wash.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
July.....	435	276	344	17,700	A.
August.....	276	232	248	15,200	C.
September.....	870	232	345	20,500	A.
The period.....				53,400	
1911-12.					
October.....	500	246	314	19,300	A.
November.....	4,930	246	1,430	85,100	A.
December.....	1,620	700	1,150	70,700	A.
January 1-11.....	1,320	700	950	20,700	A.
The period.....				196,000	
1912-13.					
December.....	5,770	700	2,040	125,000	A.
January.....	5,770	1,460	2,830	174,000	A.
February.....	3,390	930	1,790	99,400	A.
March.....	4,660	870	1,730	106,000	A.
April.....	2,930	990	1,640	97,600	A.
May.....	3,150	810	1,420	87,300	A.
June.....	3,150	810	1,230	73,200	A.
July.....	930	360	542	33,300	A.
August.....	396	276	325	20,000	A.
September.....	2,040	246	599	35,600	A.
The period.....				851,000	
1916.					
August 19-31.....	435	342	371	9,570	A.
September.....	478	276	322	19,200	A.
1916-17.					
October.....	595	246	275	16,900	B.
November.....	2,930	360	940	55,900	A.
December.....	3,040	700	1,280	78,700	A.
January.....	4,400	700	1,420	87,300	A.
February.....	1,950	645	1,310	72,800	A.
March.....	3,270	595	1,210	74,400	A.
April.....	4,140	1,460	2,240	133,000	A.
May.....	2,310	1,250	1,620	99,600	A.
June.....	1,780	1,050	1,380	82,100	A.
July.....	1,110	455	710	43,700	A.
August.....	435	292	356	21,900	A.
September.....	342	261	293	17,400	B.
The year.....	4,400	246	1,080	784,000	

Monthly discharge of Kalama River near Kalama—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1917-18.					
October.....	292	205	233	14,300	B.
November.....	1,390	218	402	23,900	A.
December.....	10,700	930	3,930	242,000	A.
January.....	3,880	1,460	2,590	159,000	A.
February.....	6,360	1,180	2,290	127,000	A.
March.....	4,660	930	1,670	103,000	A.
April.....	1,950	930	1,340	79,700	A.
May.....	1,050	532	698	42,900	A.
June.....	532	310	388	23,100	A.
July.....	328	240	281	17,300	A.
August.....	310	210	238	14,600	A.
September.....	210	175	194	11,500	A.
The year.....	10,700	175	1,190	858,000	
1918-19.					
October.....	1,460	178	404	24,800	A.
November.....	4,660	532	1,320	78,600	A.
December.....	9,100	630	1,890	116,000	A.
January.....	9,100	580	2,600	160,000	A.
February.....	4,140	1,110	1,850	103,000	A.
March.....	3,390	1,110	1,900	117,000	A.
April.....	2,930	1,050	1,690	101,000	A.
May.....	1,620	715	1,060	65,200	A.
June.....	930	508	691	41,100	A.
July.....	485	340	391	24,000	A.
August.....	340	295	310	19,100	A.
September.....	388	228	286	17,000	A.
The year.....	9,100	178	1,200	867,000	

NOTE.—Maximum discharge during period of record, 11,700 second-feet Dec. 18, 1917; minimum discharge, 175 second-feet Sept. 30, 1918.

COWLITZ RIVER BASIN.

OHANAPECOSH RIVER NEAR LEWIS (190).

Staff gage 900 feet above Clear Fork and 7 miles northeast of Lewis, in Lewis County. Drainage area, 116 square miles; measured on Plate I, Water-Supply Paper 313.

Monthly discharge of Ohanapecosh River near Lewis.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907.							
August 19-31.....	210	111	146	1.26	0.61	3,770	B.
September.....	340	111	146	1.26	1.41	8,690	B.
1907-8.							
October.....	155	91	100	.862	.99	6,150	B.
November.....		91	372	3.21	3.58	22,100	C.
December.....	1,450	255	571	4.92	5.67	35,100	B.
January.....	340	132	243	2.09	2.41	14,900	B.
February.....	305	132	204	1.76	1.90	11,700	B.
March.....	3,730	155	650	5.60	6.46	40,000	B.
April.....	2,300	255	736	6.34	7.07	43,800	B.
May.....	1,450	500	883	7.61	8.77	54,300	B.
June.....	2,620	770	1,510	13.0	14.50	89,800	B.
July.....	2,460	420	1,360	11.7	13.49	83,600	B.
August.....	460	144	251	2.16	2.49	15,400	B.
September.....	144	72	119	1.03	1.15	7,080	B.
The year.....	3,730	72	584	5.03	68.48	424,000	

Monthly discharge of Ohanapecosh River near Lewis—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1908-9.							
October.....	770	72	160	1.38	1.59	9,840	B.
November.....	1,660	111	474	4.09	4.56	28,200	B.
December.....	340	168	223	1.92	2.21	13,700	B.
January.....	2,060	168	468	4.03	4.65	28,800	B.
February.....	680	180	303	2.61	2.72	16,800	B.
March.....	400	210	273	2.35	2.71	16,800	B.
April.....	590	288	402	3.47	3.87	23,900	B.
May.....	1,820	480	927	7.99	9.21	57,000	B.
June.....	3,060	990	1,700	14.7	16.40	101,000	B.
July.....	1,520	420	822	7.09	8.17	50,500	B.
August.....	400	155	237	2.04	2.35	14,600	B.
September.....	195	101	140	1.21	1.35	8,330	B.
The year.....	3,060	72	511	4.41	59.79	369,000	
1909-10.							
October.....	168	82	110	.948	1.09	6,760	B.
November.....	7,500	144	1,950	16.8	18.74	116,000	B.
December.....	1,980	252	615	5.30	6.11	37,800	B.
January.....	2,060	111	448	3.86	4.45	27,500	B.
February.....	560	165	319	2.75	2.86	17,700	B.
March.....			1,030	8.88	10.24	63,300	C.
April.....	2,700	485	1,100	9.48	10.58	65,500	B.
May.....	2,970	870	1,590	13.7	15.79	97,800	B.
June.....	2,300	690	1,090	9.40	10.49	64,900	B.
July.....	870	310	566	4.88	5.63	34,800	B.
August.....	440	90	215	1.85	2.13	13,200	B.
September.....	182	90	125	1.08	1.20	7,440	B.
The year.....	7,500	82	764	6.59	89.31	553,000	
1910-11.							
October.....	1,980	198	532	4.59	5.29	32,700	B.
November.....	2,930	221	870	7.50	8.37	51,800	B.
December.....	670	166	343	2.96	3.41	21,100	B.
January.....	295	89	154	1.33	1.53	9,470	C.
February.....	114	69	82.5	.711	.74	4,580	C.
March.....	760	58	216	1.86	2.14	13,300	B.
April.....	1,010	192	379	3.27	3.65	22,600	B.
May.....	1,810	480	758	6.53	7.53	46,600	B.
June.....	2,620	760	1,360	11.7	13.05	80,900	B.
July.....	1,240	260	656	5.66	6.52	40,300	B.
August.....	260	140	174	1.50	1.73	10,700	B.
September.....	460	115	212	1.83	2.04	12,600	B.
The year.....	2,930	58	479	4.13	56.00	347,000	
1911-12.							
October.....	140	88	120	1.03	1.19	7,380	B.
November.....	1,310	84	469	4.04	4.51	27,900	B.
December.....	550	178	352	3.03	3.49	21,600	B.
January.....	1,660	148	561	4.84	5.58	34,500	B.
February.....	810	225	521	4.49	4.84	30,000	B.
March.....	395	132	186	1.60	1.84	11,400	B.
April.....	650	335	428	3.69	4.12	25,500	B.
May.....	2,300	505	1,300	11.2	12.91	79,900	B.
June.....	2,140		1,420	12.2	13.61	84,500	B.
July.....		242	520	4.48	5.16	32,000	C.
August.....	260	140	199	1.72	1.98	12,200	B.
September.....	395	115	201	1.73	1.93	12,000	B.
The year.....	2,300	84	522	4.50	61.16	379,000	
1912-13.							
October.....	210	93	142	1.22	1.41	8,730	B.
November.....	1,820	167	684	5.90	6.58	40,700	B.
December.....	595	260	340	2.93	3.38	20,900	B.
January 1-12.....	930	375	569	4.91	2.19	13,500	B.
April 14-30.....	575	181	393	3.39	2.14	13,300	B.
May.....	2,020	438	1,120	9.66	11.14	68,900	B.
June.....	2,540	1,310	1,890	16.3	18.19	112,000	B.
July.....	1,820	575	1,200	10.3	11.87	73,800	B.
August.....	650	168	330	2.84	3.27	20,300	B.
September.....	650	115	230	1.98	2.21	13,700	B.

NOTE.—Maximum discharge during period of record, 7,500 second-feet Nov. 23, 1909; minimum discharge 56 second-feet Sept. 28, 1915.

Yearly discharge of Ohanapecosh River near Lewis.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maximum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
			Mean.					Month.
1908.....	3,730	72	100	Oct.....	584	5.03	68.48	424,000
1909.....	3,060	72	140	Sept.....	511	4.41	59.79	369,000
1910.....	7,500	82	110	Oct.....	764	6.59	89.31	553,000
1911.....	2,930	58	82.5	Feb.....	479	4.13	56.00	347,000
1912.....	2,300	84	120	Oct.....	522	4.50	61.16	379,000
The period.	7,500	58	82.5	Feb., 1911.	572	4.93	66.95	414,000

COWLITZ RIVER AT LEWIS (191).

Staff gage at suspension bridge 1 mile northeast of Lewis and 1½ miles below Lake Creek, in Lewis County.

Drainage area, 275 square miles; measured on Plate I, Water-Supply Paper 313.

Monthly discharge of Cowlitz River at Lewis.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1911.							
July.....	2,940	950	1,740	6.33	7.30	107,000	B.
August.....	1,000	570	731	2.66	3.07	44,900	B.
September.....	1,270	390	653	2.37	2.64	38,900	B.
The period.....						191,000	
1911-12.							
October.....	570	285	390	1.42	1.64	24,000	B.
November.....		285	^a 1,740	6.33	7.06	104,000	C.
December.....	1,560	640	1,020	3.71	4.28	62,700	B.
January.....	5,520	430	1,640	5.96	6.87	101,000	B.
February.....	2,420	720	1,550	5.64	6.08	89,200	B.
March.....	855	465	577	2.10	2.42	35,500	B.
April.....	1,440	855	1,040	3.78	4.22	61,900	B.
May.....	4,810	1,200	2,680	9.75	11.24	165,000	B.
June.....	4,580	1,680	3,100	11.3	12.61	184,000	C.
July.....	1,680	900	1,400	5.09	5.87	86,100	B.
August.....	2,260	570	916	3.33	3.84	56,300	B.
September.....	2,960	430	876	3.19	3.56	52,100	B.
The year.....	5,520	285	1,410	5.13	69.69	1,020,000	
1912-13.							
October.....	810	355	509	1.85	2.13	31,300	C.
November.....	5,040	535	1,590	5.78	6.45	94,600	B.
December.....	1,200	656	849	3.09	3.56	52,200	B.
January.....	2,600	500	1,020	3.71	4.28	62,700	B.
February.....	2,600	500	968	3.52	3.66	53,800	B.
March.....	1,100	570	821	2.99	3.45	50,500	B.
April.....	2,260	810	1,530	5.56	6.20	91,000	B.
May.....	5,520	1,200	2,870	10.4	11.99	176,000	B.
June.....	6,520	2,600	3,980	14.5	16.18	237,000	C.
July.....	3,520	1,440	2,470	8.98	10.35	152,000	B.
August.....	1,680	720	1,060	3.85	4.44	65,200	B.
September.....	1,680	479	762	2.77	3.09	45,300	B.
The year.....	6,520	355	1,540	5.60	75.78	1,110,000	

^a Record fragmentary, discharge estimated by comparison with record of Ohanapecosh River near Lewis.

Monthly discharge of Cowlitz River at Lewis—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1913-14.							
October.....	2,370	378	1,080	3.93	4.53	66,400	C.
November.....	2,050	740	1,230	4.47	4.99	73,200	C.
December.....	1,160	433	708	2.57	2.96	43,500	C.
January.....	12,500	491	2,450	8.91	10.27	151,000	C.
February.....		732	874	3.18	3.31	48,500	C.
March.....	2,050	832	1,400	5.09	5.87	86,100	C.
April.....			1,980	7.20	8.03	118,000	D.
May.....			2,370	8.62	9.94	146,000	D.
June.....			1,810	6.58	7.34	108,000	D.
July.....			1,380	5.02	5.79	84,800	D.
August.....			770	2.80	3.23	47,300	C.
September.....	740	390	560	2.04	2.28	33,300	C.
The year.....	12,500	378	1,390	5.05	68.54	1,010,000	
1914-15.							
October.....	1,760	588	983	3.57	4.12	60,400	B.
November.....	13,400	1,260	3,630	13.2	14.73	216,000	B.
December.....	1,140	425	584	2.12	2.44	35,900	B.
January.....	707	455	597	2.17	2.50	36,700	B.
February.....	707	488	573	2.08	2.17	31,800	B.
March.....	1,920	520	1,030	3.75	4.32	63,300	A.
April.....	7,190	1,140	2,080	7.56	8.44	124,000	A.
May.....	1,660	920	1,220	4.44	5.12	75,000	A.
June.....	1,540	776	1,090	3.96	4.42	64,900	B.
July.....	1,080	654	809	2.94	3.39	49,700	B.
August.....	883	600	721	2.62	3.02	44,300	B.
September.....	600	375	451	1.64	1.83	26,800	B.
The year.....	13,400	375	1,150	4.18	56.50	829,000	
1915-16.							
October.....	5,410	360	873	3.17	3.66	53,700	A.
November.....	4,320	575	1,370	4.98	5.56	81,500	A.
December.....	3,500	846	1,480	5.38	6.20	91,000	A.
January.....	1,220	575	764	2.78	3.20	47,000	A.
February.....	3,900		1,900	6.91	7.45	109,000	A.
March.....	6,540	1,040	2,680	9.75	11.24	165,000	A.
April.....	2,770	1,540	2,130	7.75	8.65	127,000	A.
May.....	5,410	2,000	3,010	10.9	12.57	185,000	A.
June.....	9,640	2,440	4,960	18.0	20.08	295,000	B.
July.....	11,600	2,420	4,690	17.1	19.71	288,000	B.
August.....	2,580	1,020	1,840	6.69	7.71	113,000	B.
September.....	1,390	546	772	2.81	3.14	45,900	B.
The year.....	11,600	360	2,210	8.04	109.17	1,600,000	
1916-17.							
October.....	518	323	397	1.44	1.66	24,400	B.
November.....	1,570	366	614	2.23	2.49	36,500	B.
December.....	930	413	584	2.12	2.44	35,900	B.
January.....	1,020	413	614	2.23	2.57	37,800	B.
February.....	1,330	490	905	3.29	3.43	50,300	B.
March.....	700	390	477	1.73	1.99	29,300	B.
April.....	2,260	546	1,170	4.25	4.74	69,600	B.
May.....	5,430	1,220	2,910	10.6	12.22	179,000	B.
June.....	8,440	2,580	5,120	18.6	20.75	305,000	B.
July.....	7,340	1,760	4,820	17.5	20.18	296,000	B.
August.....	2,190	970	1,380	5.02	5.79	84,800	B.
September.....	929	547	760	2.76	3.08	45,200	B.
The year.....	8,440	323	1,650	6.00	81.34	1,190,000	
1917-18.							
October.....	715	420	525	1.91	2.20	32,300	B.
November.....	781	420	516	1.88	2.10	30,700	B.
December.....		500	6,800	24.7	28.48	418,000	C.
January.....		1,200	3,500	12.7	14.64	215,000	C.
February.....	2,950	545	1,230	4.47	4.66	68,300	B.
March.....	2,260	395	850	3.09	3.56	52,300	B.
April.....	2,660	980	1,680	6.11	6.82	100,000	B.
May.....	3,770	1,150	1,980	7.20	8.30	122,000	B.
June.....	5,900	1,770	3,440	12.5	13.95	205,000	B.
July.....	2,130		1,510	5.49	6.33	92,800	B.
August.....	980	580	733	2.67	3.08	45,100	B.
September.....	830	332	572	2.08	2.32	34,000	B.
The year.....		332	1,950	7.09	96.44	1,420,000	

Monthly discharge of Cowlitz River at Lewis—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1918-19.							
October.....	2,950	295	790	2.87	3.31	48,600	B.
November.....	2,010	545	930	3.38	3.77	53,000	B.
December.....	7,460	603	1,920	6.98	8.05	118,000	B.
January.....	16,000	487	2,770	10.1	11.64	170,000	B.
February.....	1,070	572	783	2.85	2.97	43,500	B.
March.....	1,270	514	711	2.59	2.99	43,700	B.
April.....	2,670	980	1,630	5.93	6.62	97,000	B.
May.....	7,740	1,430	2,700	9.82	11.32	166,000	B.
June.....	3,960	2,210	3,030	11.0	12.27	180,000	B.
July.....	.....	.....	2,200	8.00	9.22	135,000	D.
August.....	1,270	603	987	3.59	4.14	60,700	C.
September.....	803	275	510	1.85	2.06	30,300	C.
The year.....	16,000	275	1,590	5.78	78.36	1,150,000	

NOTE.—Maximum discharge during period of record, 22,700 second-feet at 8 a. m. Dec. 29, 1917; minimum discharge, 275 second-feet Sept. 29, 1919. Monthly discharge for year ending Sept. 30, 1914, determined from fragmentary daily discharge, published in Water-Supply Paper 394, p. 139, and by comparison with record of Cowlitz River at Mossy Rock.

Yearly discharge of Cowlitz River at Lewis.

Year ending September 30.	Discharge in second-feet.					Annual run-off.		
	Maxi- mum day.	Minimum.		Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.	
		Day.	Calendar month.					
			Mean.					Month.
1912.....	5,520	285	390	Oct.....	1,410	5.13	69.69	1,020,000
1913.....	6,520	355	509	Oct.....	1,540	5.60	75.78	1,110,000
1914.....	12,500	378	560	Sept.....	1,390	5.05	68.54	1,010,000
1915.....	13,400	375	451	Sept.....	1,150	4.18	56.50	829,000
1916.....	11,600	360	764	Jan.....	2,210	8.04	109.17	1,600,000
1917.....	8,440	323	397	Oct.....	1,650	6.00	81.34	1,190,000
1918.....	.....	332	516	Nov.....	1,950	7.09	96.44	1,420,000
1919.....	16,000	275	510	Sept.....	1,590	5.78	78.36	1,150,000
The period.....	.....	275	390	Oct., 1911..	1,610	5.86	79.48	1,170,000

COWLITZ RIVER AT RANDLE (192).

Staff gage at ferry at Randle, 11 miles above Cispus River, in Lewis County.
 Drainage area, 519 square miles; measured on Plate I, Water-Supply Paper 313.

Monthly discharge of Cowlitz River at Randle.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910-11.							
October.....	5,140	833	2,220	4.28	4.93	136,000	A.
November.....	26,100	1,140	7,020	13.5	15.06	418,000	C.
December.....	6,850	1,110	3,330	6.42	7.40	205,000	A.
January.....	2,910	1,020	1,680	3.24	3.74	103,000	A.
February.....	2,290	628	1,100	2.12	2.21	61,100	A.
March.....	3,700	628	1,650	3.18	3.67	101,000	A.
April.....	3,810	1,380	2,460	4.74	5.29	146,000	A.
May.....	12,100	3,000	4,000	7.71	8.89	246,000	B.
June.....	13,100	3,390	5,840	11.3	12.61	348,000	B.
July.....	5,010	1,520	3,210	6.18	7.12	197,000	A.
August.....	1,450	1,020	1,160	2.24	2.58	71,300	A.
September.....	2,040	714	1,200	2.31	2.58	71,400	A.
The year.....	26,100	628	2,910	5.61	76.08	2,100,000	
1911.							
October.....	803	550	647	1.25	1.44	39,800	A.
November.....	21,900	514	4,320	8.32	9.28	257,000	C.
December.....	3,390	1,520	2,460	4.74	5.46	151,000	A.
The period.....						448,000	

COWLITZ RIVER AT MOSSY ROCK (193).

Staff gage at county highway bridge 1 mile north of Mossy Rock and 2½ miles above Tilton River, in Lewis County.

Drainage area, 1,170 square miles; measured on Plate I, Water-Supply Paper 313.

Monthly discharge of Cowlitz River at Mossy Rock.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square milc.	Inches.	Acre-feet.	
1912.							
January.....	18,200	2,590	8,610	7.36	8.48	529,000	C.
February.....	11,400	4,690	8,830	7.55	8.14	508,000	C.
March.....	4,090	1,970	2,790	2.38	2.74	172,000	C.
April 1-20.....	4,390	2,210	3,760	3.21	2.39	149,000	C.
The period.....						1,360,000	
1912-13.							
November 20-30.....	6,980	5,320	6,260	5.35	2.19	137,000	C.
December 1-5.....	5,160	5,000	5,060	4.32	.80	50,200	C.
January 5-31.....	9,360	3,380	5,650	4.83	4.85	303,000	C.
February.....	7,150	3,240	4,640	3.97	4.13	258,000	C.
March.....	4,690	2,850	3,810	3.26	3.76	234,000	C.
April.....	9,360	3,800	6,750	5.77	6.44	402,000	C.
May.....	15,500	5,480	10,300	8.80	10.14	633,000	C.
June.....	18,700	8,490	11,400	9.74	10.87	678,000	C.
1913-14.							
October.....	4,520	.....	^a 2,990	2.56	2.95	184,000	D.
November.....	7,740	2,420	4,060	3.47	3.87	242,000	C.
December.....	5,750	2,040	3,230	2.76	3.18	199,000	C.
January.....	30,300	2,040	9,300	7.95	9.16	572,000	C.
February.....	5,540	2,870	3,510	3.00	3.12	195,000	C.
March.....	7,370	3,630	5,870	5.02	5.79	361,000	C.
April.....	12,000	3,790	7,870	6.73	7.51	468,000	C.
May.....	11,100	4,470	7,590	6.49	7.48	467,000	C.
June.....	5,720	3,310	4,170	3.56	3.97	248,000	B.
July.....	3,790	1,740	2,370	2.03	2.34	146,000	B.
August.....	1,740	1,320	1,500	1.28	1.48	92,200	B.
September.....	1,520	975	1,160	.992	1.11	69,000	B.
The year.....	30,300	975	4,480	3.83	51.96	3,240,000	

^a Discharge Oct. 1-12 estimated by comparison with record for Lewis River near Amboy.

Monthly discharge of Cowlitz River at Mossy Rock—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1914-15.							
October.....	8,660	1,140	2,970	2.51	2.89	181,000	B.
November.....	16,100	3,630	8,440	7.21	8.04	502,000	C.
December.....	3,310	1,320	1,790	1.53	1.76	110,000	C.
January.....	2,460	1,220	1,780	1.52	1.75	109,000	C.
February.....	2,210	1,520	1,910	1.63	1.70	106,000	C.
March.....	3,790	1,740	2,510	2.15	2.48	154,000	C.
April.....	17,900	3,290	6,030	5.15	5.75	359,000	B.
May.....	6,750	3,000	3,850	3.29	3.79	237,000	A.
June.....	4,430	2,210	2,900	2.48	2.77	173,000	A.
July.....	2,460	1,610	1,990	1.70	1.96	122,000	A.
August.....	1,730	1,400	1,530	1.31	1.51	94,100	A.
September.....	1,300	862	1,010	.864	.96	60,100	A.
The year.....	17,900	862	3,050	2.61	35.36	2,210,000	
1915-16.							
October.....	3,000	825	1,410	1.21	1.40	86,700	A.
November.....	9,300	1,850	4,730	4.04	4.51	281,000	A.
December.....	20,900	3,760	7,200	6.15	7.09	443,000	B.
January.....	4,260	2,090	2,660	2.27	2.62	164,000	A.
February.....	15,200	2,210	7,780	6.65	7.17	448,000	A.
March.....	16,700	4,430	10,200	8.72	10.05	627,000	A.
April.....	8,740	5,850	7,380	6.31	7.04	439,000	A.
May.....	15,400	7,290	9,420	8.05	9.28	579,000	A.
June.....	23,000	8,010	12,900	11.00	12.27	768,000	B.
July.....	22,700	5,900	10,800	9.23	10.64	664,000	B.
August.....	6,440	2,870	4,390	3.75	4.32	270,000	A.
September.....	3,310	1,420	2,030	1.74	1.94	121,000	A.
The year.....	23,000	825	6,730	5.75	78.33	4,890,000	
1916-17.							
October.....	1,520	975	1,130	.966	1.11	69,500	A.
November.....	5,720	1,420	2,520	2.15	2.40	150,000	A.
December.....	4,300	2,130	3,120	2.67	3.08	192,000	A.
January.....	4,470	2,090	3,190	2.73	3.15	196,000	A.
February.....	6,630	2,870	4,680	4.00	4.16	260,000	A.
March.....	4,130	2,210	2,820	2.41	2.78	173,000	A.
April.....	9,400	3,470	6,120	5.23	5.84	364,000	A.
May.....	15,900	6,440	9,900	8.46	9.75	609,000	B.
June.....	17,400	9,760	13,600	11.6	12.94	809,000	B.
July.....	15,400	4,450	10,200	8.72	10.05	627,000	A.
August.....	4,790	2,150	3,020	2.58	2.97	186,000	A.
September.....	2,150	1,520	1,790	1.53	1.71	107,000	A.
The year.....	17,400	975	5,170	4.42	59.94	3,740,000	

NOTE.—Maximum discharge during period of record, 30,300 second-feet Jan. 7-8, 1914; flood of November 1906, as determined by leveling to high-water marks pointed out by residents, estimated at 51,000 second-feet; minimum discharge, 825 second-feet Oct. 10-13, 1915.

COWLITZ RIVER AT MAYFIELD (194).

Staff gage at highway bridge at Mayfield 4 miles below Tilton River, in Lewis County.

Drainage area, 1,320 square miles; measured on Plate I, Water-Supply Paper 313:

Monthly discharge of Cowlitz River at Mayfield.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910.							
August 25-31.....	1,360	1,260	1,310	0.992	0.26	18,200	B.
September.....	1,360	1,040	1,260	.955	1.07	75,000	B.
1910-11.							
December.....	11,700	5,880	7,660	5.80	6.69	471,000	B.
January.....	6,360	5,000	5,930	4.49	5.18	365,000	B.
February.....	3,800	3,160	3,690	2.80	2.92	205,000	B.
March.....	6,200	3,020	4,430	3.36	3.87	272,000	B.
April.....	7,900	4,200	5,210	3.95	4.41	310,000	B.
May.....	11,500	5,960	7,870	5.96	6.87	484,000	B.
June.....	12,500	5,400	7,980	6.05	6.75	475,000	B.
July.....	5,800	2,370	4,050	3.07	3.54	249,000	B.
August.....	2,070	1,770	1,900	1.44	1.66	117,000	B.
September.....	3,480	1,770	2,160	1.64	1.83	129,000	B.
The period.....						3,080,000	
1911.							
October.....	1,770	1,660	1,710	1.30	1.50	105,000	B.
November.....	35,000	1,710	9,480	7.18	8.01	564,000	C.

CLEAR FORK NEAR LEWIS (195).

Staff gage above Yakima trail bridge, 1,000 feet above mouth and 7 miles northeast of Lewis, in Lewis County.

Drainage area, 48 square miles (approximate); measured on Plate I, Water-Supply Paper 313.

Monthly discharge of Clear Fork near Lewis.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907.							
August 20-31.....			93.2	1.94	0.87	2,220	C.
September.....	165	71	89.1	1.86	2.08	5,300	C.
The period.....						7,520	C.
1907-8.							
October.....	71	53	63.5	1.32	1.52	3,900	C.
November.....	950	62	156	3.25	3.63	9,280	C.
December.....	752	117	258	5.38	6.20	15,900	C.
January.....	183	71	130	2.71	3.12	7,990	C.
February.....	156	71	97.2	2.02	2.18	5,590	C.
March.....	1,480	86	291	6.06	6.99	17,900	C.
April.....	823	104	265	5.52	6.16	15,800	C.
May.....	468	203	304	6.33	7.30	18,700	C.
June.....	752	266	461	9.60	10.71	27,400	C.
July.....	652	165	394	8.21	9.46	24,200	C.
August.....	183	81	125	2.60	3.00	7,690	C.
September.....	81	53	66.1	1.38	1.54	3,930	C.
The year.....	1,480	53	218	4.54	61.81	158,000	
1908-9.							
October.....	336	53	85.8	1.79	2.06	5,280	C.
November.....	558	62	157	3.27	3.65	9,340	C.
December.....	165	62	87.4	1.82	2.10	5,370	C.
January.....	718	76	194	4.04	4.66	11,900	C.
February.....	244	76	119	2.48	2.58	6,610	C.
March.....	124	81	95.5	1.99	2.29	5,870	C.
April.....	244	98	132	2.75	3.07	7,860	C.
May.....	498	174	280	5.83	6.72	17,200	C.
June.....	860	266	468	9.75	10.88	27,800	C.
July.....	374	124	220	4.58	5.28	13,500	C.
August.....	117	62	83.0	1.73	1.99	5,100	C.
September.....	110	49	61.8	1.29	1.44	3,680	C.
The year.....	860	49	165	3.44	46.72	120,000	

Monthly discharge of Clear Fork near Lewis—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1909-10.							
October.....	104	49	61.6	1.28	1.48	3,790	C.
November.....	2,530	71	647	13.5	15.06	38,500	C.
December.....	804	153	296	6.17	7.11	18,200	C.
January.....	680	83	192	4.00	4.61	11,800	C.
February.....	300	89	169	3.52	3.66	9,390	C.
March.....	1,060	263	517	10.8	12.45	31,800	C.
April.....	980	228	434	9.04	10.09	25,800	C.
May.....	1,020	380	585	12.2	14.07	36,000	C.
June.....	680	276	387	8.06	8.99	23,000	C.
July.....	276	135	211	4.40	5.07	13,000	C.
August.....	135	77	101	2.10	2.42	6,210	C.
September.....	77	66	74.4	1.55	1.73	4,430	C.
The year.....	2,530	49	307	6.40	86.74	222,000	
1910-11.							
October.....	822	83	252	5.25	6.05	15,500	C.
November.....	1,350	135	391	8.15	9.09	23,300	B.
December.....	326	144	215	4.48	5.16	13,200	B.
January.....	228	96	133	2.77	3.19	8,180	B.
February.....	110	66	82.3	1.71	1.78	4,570	B.
March.....	288	61	129	2.69	3.10	7,930	B.
April.....	394	126	194	4.04	4.51	11,500	B.
May.....	646	276	360	7.50	8.65	22,100	B.
June.....	1,040	313	528	11.0	12.27	31,400	B.
July.....	366	135	242	5.04	5.81	14,900	B.
August.....	126	72	96.4	2.01	2.32	5,930	A.
September.....	228	77	110	2.29	2.56	6,540	A.
The year.....	1,350	61	228	4.75	64.49	165,000	
1911-12.							
October.....	96	56	72.4	1.51	1.74	4,450	A.
November.....	1,700	56	354	7.38	8.23	21,100	B.
December.....	288	112	193	4.02	4.64	11,900	B.
January.....	515	103	277	5.77	6.65	17,000	B.
February.....	394	135	288	6.00	6.47	16,600	B.
March.....	205	85	113	2.35	2.71	6,950	B.
April.....	228	135	164	3.42	3.82	9,760	B.
May.....	900	216	537	11.2	12.91	33,000	C.
June.....	822	288	542	11.3	12.61	32,300	C.
July.....	213	132	252	5.25	6.05	15,500	C.
August.....	380	100	143	2.98	3.44	8,790	B.
September.....	515	88	159	3.31	3.69	9,460	B.
The year.....	1,700	56	257	5.35	72.96	187,000	
1912-13.							
October.....	153	77	100	2.08	2.40	6,150	B.
November.....	714	89	311	6.48	7.23	18,500	B.
December.....	355	153	204	4.25	4.90	12,500	B.
January 1-12.....	547	239	340	7.08	3.16	8,090	B.
April 14-30.....	394	263	326	6.79	4.29	11,000	B.
May.....	1,060	239	547	11.4	13.14	33,600	C.
June.....	1,270	239	650	13.5	15.06	38,700	C.
July.....	579	239	431	8.98	10.35	26,500	C.
August.....	288	144	192	4.00	4.61	11,800	B.
September.....	339	103	158	3.29	3.67	9,400	B.

NOTE.—Maximum discharge during period of record, 2,530 second-feet Nov. 23, 1909; minimum discharge 43 second-feet Sept. 28, 1915.

Yearly discharge of Clear Fork near Lewis.

Year ending September 30.	Discharge in second-feet.						Annual run-off.	
	Maxi- mum day.	Minimum.			Annual mean.	Annual mean per square mile.	Inches.	Acre-feet.
		Day.	Calendar month.					
			Mean.	Month.				
1908.....	1,480	53	63.5	Oct.....	218	4.54	61.81	153,000
1909.....	860	49	61.8	Sept....	165	3.44	46.72	120,000
1910.....	2,530	49	61.6	Oct.....	307	6.40	86.74	222,000
1911.....	1,350	61	82.3	Feb.....	228	4.75	64.49	165,000
1912.....	1,700	56	72.4	Oct.....	257	5.35	72.96	187,000
The period.	2,530	49	61.6	Oct., 1909.	235	4.90	66.54	170,000

COAL CREEK NEAR LEWIS (196).

Staff gage at Yakima trail bridge, half a mile above mouth of creek and 4 miles northeast of Lewis, in Lewis County.

Drainage area, 10 square miles (approximate); measured on Plate I, Water-Supply Paper 313.

Monthly discharge of Coal Creek near Lewis.

Month.	Mean discharge in second-feet.	Run-off in acre-feet.	Accu- racy.	Month.	Mean discharge in second-feet.	Run-off in acre-feet.	Accu- racy.
1910-11.				1913.			
November 6-30.....	100	4,960	A.	June.....	191	11,400	B.
December.....	45.0	2,770	A.	July.....	80.5	4,950	B.
January.....	23.6	1,450	A.	August.....	15.8	972	B.
February.....	12.1	672	A.	September.....	11.1	660	B.
March.....	33.3	2,050	A.	1913-14.			
April.....	42.2	2,510	A.	October.....	38.4	2,360	B.
May.....	71.7	4,410	A.	November.....	46.2	2,750	B.
June.....	100	5,950	A.	December.....	27.0	1,660	B.
July.....	28.9	1,780	A.	January.....	88.1	5,420	B.
August.....	6.81	419	B.	February.....	24.4	1,360	B.
September.....	14.6	869	B.	March.....	69.5	4,270	B.
The period.....		27,800		April.....	94.9	5,650	C.
1911-12.				May.....	99.3	6,110	C.
October.....	9.98	614	B.	June.....	63.8	3,800	C.
November.....	103	6,130	B.	July.....	16.9	1,040	C.
December.....	37.2	2,290	B.	August.....	7.06	434	C.
January.....	93.0	5,720	B.	September.....	9.76	581	C.
February.....	71.9	4,140	B.	The year.....			
March.....	18.0	1,110	B.		48.9	35,400	
April.....	33.3	1,980	B.	1914-15.			
May.....	130	7,990	B.	October.....	24.8	1,520	C.
June.....	137	8,150	B.	November.....	124	7,380	C.
July.....	27.4	1,680	B.	December.....	18.1	1,110	C.
August.....	12.3	756	B.	January.....	20.3	1,250	C.
September.....	19.2	1,140	B.	February.....	14.6	811	C.
The year.....	57.4	41,700		March.....	28.7	1,760	C.
1912-13.				April.....	71.6	4,260	C.
October.....	12.5	769	B.	May.....	31.2	1,920	B.
November.....	53.5	3,180	B.	June.....	19.1	1,140	C.
December.....	30.0	1,840	B.	July.....	11.3	695	C.
January 1-20.....	65.0	2,580	B.	August.....	7.00	430	C.
April 12-30.....	131	4,940	B.	September.....	4.31	256	C.
May.....	167	10,300	B.	The year.....			
					31.1	22,500	

NOTE.—Maximum discharge during period of record, 580 second-feet Nov. 19, 1911; minimum discharge, 3 second-feet Sept. 8, 1911.

LAKE CREEK AT OUTLET OF PACKWOOD LAKE, NEAR LEWIS (197).

500 feet below outlet of Packwood Lake and 5 miles east of Lewis, in Lewis County.
Staff gages used prior to August 3, 1918; water-stage recorder thereafter.

Flow regulated by natural storage in the lake.

Drainage area, 18 square miles (approximate); measured on Plate I, Water-Supply Paper 313.

Monthly discharge of Lake Creek at outlet of Packwood Lake, near Lewis.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1911-12.					
October.....	53	40	47.1	2,900	B.
November.....	304	40	109	6,490	A.
December.....	111	64	81.9	5,040	A.
January.....	149	57	96.3	5,920	A.
February.....	163	78	119	6,840	A.
March.....	75	50	58.7	3,610	B.
April.....	64	52	59.1	3,520	B.
May.....	265	63	159	9,780	A.
June.....	324	163	244	14,500	B.
July.....	178	105	139	8,550	A.
August.....	117	73	97.4	5,990	A.
September.....	130	50	75.4	4,490	B.
The year.....	324	40	107	77,600	
1912-13.					
October.....	53	45	50.1	3,080	B.
November.....	123	48	72.9	4,340	B.
December.....	94	55	63.0	3,870	B.
January.....	142	66	86.5	5,320	A.
February.....	77	52	64.8	3,600	B.
March.....	66	55	60.2	3,700	B.
April.....	99	52	69.7	4,150	B.
May.....	304	78	160	9,840	A.
June.....	452	202	316	18,800	B.
July.....	284	152	215	13,200	A.
August.....	156	80	110	6,760	A.
September.....	136	52	75.5	4,490	A.
The year.....	452	45	112	81,200	
1913-14.					
October.....	117	50	75.0	4,610	A.
November.....	78	63	70.2	4,180	A.
December.....	76	46	57.1	3,510	B.
January.....	229	48	101	6,210	A.
February.....	68	48	55.7	3,090	B.
March.....	111	64	83.8	5,150	A.
April.....	149	70	109	6,490	A.
May.....	211	92	154	9,470	A.
June.....	211	105	152	9,040	A.
July.....	178	81	125	7,690	A.
August.....	84	57	70.5	4,330	A.
September.....	77	48	59.9	3,560	B.
The year.....	229	46	93.0	67,330	
1914-15.					
October.....	83	50	63.9	3,930	A.
November.....	247	78	137	8,150	A.
December.....	78	46	55.3	3,400	B.
January.....	47	36	42.1	2,590	B.
February.....	37	33	34.3	1,900	B.
March.....	44	33	38.0	2,340	B.
April.....	105	48	86.1	5,120	A.
May.....	117	68	83.8	5,150	A.
June.....	117	83	95.5	5,680	A.
July.....	111	73	90.9	5,590	B.
August.....	78	64	69.4	4,270	A.
September.....	64	39	51.4	3,060	B.
The year.....	247	33	70.7	51,200	

Monthly discharge of Lake Creek at outlet of Packwood Lake, near Lewis—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1915-16.					
October.....	68	36	46.5	2,860	B.
November.....	152	58	94.9	5,650	A.
December.....	152	68	94.8	5,830	A.
January.....	73	43	53.9	3,310	B.
February.....	100	48	78.4	4,510	A.
March.....	173	77	121	7,440	A.
April.....	118	82	98.6	5,870	A.
May.....	244	112	149	9,160	A.
June.....	562	124	260	15,500	A.
July.....	462	152	270	16,600	A.
August.....	166	94	134	8,240	A.
September.....	124	56	80.2	4,770	A.
The year.....	562	36	124	89,700	
1916-17.					
October.....	57	33	40.0	2,460	B.
November.....	75	41	54.0	3,210	B.
December.....	66	42	53.6	3,300	B.
January.....	62	36	45.7	2,810	B.
February.....	58	40	54.6	3,030	B.
March.....	52	36	42.4	2,610	B.
April.....	66	38	48.9	2,910	B.
May.....	228	64	119	7,320	A.
June.....	482	204	299	17,800	A.
July.....	422	173	316	19,400	A.
August.....	159	88	124	7,020	A.
September.....	88	65	76.4	4,550	A.
The year.....	482	33	106	77,000	
1917-18.					
October.....	66	36	47.0	2,890	A.
November.....	51	36	41.6	2,480	A.
December.....		45	32.5	20,000	D.
January.....		117	175	10,800	D.
February.....	129	84	105	5,830	C.
March.....	82	29	54.2	3,330	C.
April.....	113	50	71.8	4,270	C.
May.....	162	80	115	7,070	B.
June.....	403	121	255	15,200	B.
July.....	199	106	151	9,280	B.
August.....	125	67	86.6	5,320	A.
September.....	67	46	52.2	3,110	A.
The year.....		29	124	89,600	
1918-19.					
October.....	137	45	66.2	4,070	A.
November.....	92	57	69.8	4,150	A.
December.....	300	58	104	6,400	B.
January.....	389	45	122	7,500	B.
February.....	101	49	61.7	3,430	A.
March.....	53	38	44.6	2,740	A.
April.....	148	44	83.1	4,940	A.
May.....	322	114	161	9,900	A.
June.....	220	135	169	10,100	A.
July.....	195	98	152	9,350	A.
August.....	94	49	70.1	4,310	A.
September.....	78	33	49.8	2,960	A.
The year.....	389	33	96.4	69,800	

NOTE.—Maximum discharge during period of record, 580 second-feet Nov. 19, 1911; minimum discharge, 3 second feet Sept. 8, 1911.

Maximum discharge occurred on Dec. 18, 1917 (discharge not determined); minimum discharge 29 second-feet Mar. 21, 1918. Mean discharge Sept. 21-30, 1911, was 61.3 second-feet and the run-off was 1,220 acre-feet. Discharge, Dec. 18, 1917, to Jan. 23, 1918, estimated roughly by comparison with results at gaging station on Cowlitz River at Lewis, Wash.

Yearly discharge of Lake Creek at outlet of Packwood Lake, near Lewis.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1912.....	324	40	47.1	Oct.....	107	77,600
1913.....	452	45	50.1	Oct.....	112	81,200
1914.....	229	46	55.7	Feb.....	93.0	67,300
1915.....	247	33	34.3	Feb.....	70.7	51,200
1916.....	562	36	46.5	Oct.....	124	89,700
1917.....	482	33	40.0	Oct.....	106	77,000
1918.....	.....	29	41.6	Nov.....	124	89,600
1919.....	389	33	44.6	Mar.....	96.4	69,800
The period.....	.....	29	34.3	Feb., 1915.	104	75,400

LAKE CREEK AT MOUTH, NEAR LEWIS (198).

Staff gage a quarter of a mile below Yakima trail bridge and 2 miles northeast of Lewis, in Lewis County.

Flow regulated by natural storage in Packwood Lake.

Drainage area, 26 square miles (approximate); measured on Plate I, Water-Supply Paper 313.

Monthly discharge of Lake Creek at mouth, near Lewis.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1907.							
August 21-31.....	103	63	78.0	3.00	1.23	1,700	B.
September.....	103	63	73.5	2.83	3.16	4,370	B.
The period.....	.....	.....	.....	.....	.....	6,070	
1907-8.							
October.....	63	46	52.9	2.03	2.34	3,250	B.
November.....	210	46	81.2	3.12	3.48	4,830	B.
December.....	325	87	151	5.81	6.70	9,280	B.
January.....	121	68	96.9	3.73	4.30	5,960	B.
February.....	80	63	69.8	2.68	2.89	4,010	B.
March.....	1,440	54	215	8.27	9.53	13,200	B.
April.....	258	72	132	5.08	5.67	7,860	B.
May.....	170	122	143	5.50	6.34	8,790	B.
June.....	393	102	245	9.42	10.51	14,600	B.
July.....	428	145	306	11.8	13.60	18,800	B.
August.....	145	72	105	4.04	4.66	6,460	C.
September.....	72	40	55.5	2.13	2.38	3,300	C.
The year.....	1,440	40	138	5.31	72.40	100,000	
1908-9.							
October.....	102	40	52.5	2.02	2.33	3,230	C.
November.....	122	40	69.6	2.68	2.99	4,140	C.
December.....	145	51	69.5	2.67	3.08	4,270	C.
January.....	290	47	111	4.27	4.92	6,820	B.
February.....	134	51	79.0	3.04	3.17	4,390	C.
March.....	78	51	62.4	2.40	2.77	3,840	C.
April.....	78	51	62.0	2.38	2.66	3,690	C.
May.....	198	66	105	4.04	4.66	6,460	C.
June.....	428	184	273	10.5	11.71	16,200	B.
July.....	227	112	168	6.46	7.45	10,300	B.
August.....	112	66	82.8	3.18	3.67	5,090	C.
September.....	78	43	61.8	2.38	2.66	3,680	C.
The year.....	428	40	99.6	3.83	52.07	72,100	

Monthly discharge of Lake Creek at mouth, near Lewis—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1909-10.							
October.....	66	43	51.8	1.99	2.29	3,190	C.
November.....	905	51	306	11.8	13.17	18,200	B.
December.....	428	66	160	6.15	7.09	9,840	B.
January.....	170	43	81.3	3.13	3.61	5,000	C.
February.....	145	40	70.0	2.69	2.80	3,890	C.
March.....	714	102	247	9.50	10.95	15,200	B.
April.....	358	102	170	6.54	7.30	10,100	B.
May.....	376	170	239	9.19	10.60	14,700	B.
June.....	258	102	170	6.54	7.30	10,100	B.
July.....	170	85	117	4.50	5.19	7,190	B.
August.....	85	51	66.3	2.55	2.94	4,080	B.
September.....	56	36	42.5	1.63	1.82	2,530	B.
The year.....	905	36	144	5.54	75.06	104,000	
1910-11.							
October.....	170	56	99.0	3.81	4.39	6,090	B.
November.....	393	72	184	7.08	7.90	10,900	B.
December.....	198	78	116	4.46	5.14	7,130	B.
January.....	94	60	74.9	2.88	3.32	4,610	B.
February.....	66	40	50.7	1.95	2.03	2,820	B.
March.....	274	40	58.0	2.23	2.57	3,570	B.
April.....	78	51	62.1	2.39	2.67	3,700	B.
May.....	393	66	126	4.85	5.59	7,750	A.
June.....	393	170	244	9.38	10.46	14,500	A.
July.....	227	122	171	6.58	7.59	10,500	A.
August.....	112	60	78.2	3.01	3.47	4,810	A.
September.....	102	47	72.0	2.77	3.09	4,280	A.
The year.....	393	40	112	4.29	58.22	80,700	
1911-12.							
October.....	47	36	42.4	1.63	1.88	2,610	B.
November.....	464	36	147	5.65	6.30	8,750	A.
December.....	122	71	95.8	3.68	4.24	5,890	A.
January.....	290	60	149	5.73	6.61	9,160	B.
February.....	255	100	174	6.69	7.22	10,000	B.
March.....	92	56	64.8	2.49	2.87	3,980	B.
April.....	71	51	59.9	2.30	2.57	3,560	B.
May.....	290	60	155	5.96	6.87	9,530	B.
June.....	355	172	280	10.8	12.05	16,700	B.
July.....	221	112	150	5.77	6.65	9,220	B.
August.....	145	70	101	3.88	4.47	6,210	B.
September.....	140	50	78.4	3.02	3.37	4,670	B.
The year.....	464	36	124	4.77	65.10	90,300	
1912-13.							
October.....	59	47	51.6	1.98	2.28	3,170	B.
November.....	198	51	93.0	3.58	3.99	5,530	B.
December.....	170	66	83.9	3.23	3.72	5,160	B.
January 1-22.....	170	60	99.8	3.84	3.14	4,350	B.
March 11-31.....	94	56	80.6	3.10	2.42	3,350	B.
April.....	158	72	107	4.12	4.60	6,370	B.
May.....	428	85	232	8.92	10.28	14,300	B.
June.....	502	290	380	14.6	16.29	22,600	B.
July.....	324	158	267	10.3	11.87	16,400	B.
August.....	198	95	134	5.15	5.94	8,240	B.
September.....	168	60	91.8	3.53	3.94	5,460	B.
1913-14							
October.....	145	56	86.7	3.33	3.84	5,330	B.
November.....	122	78	92.0	3.54	3.95	5,470	B.
December.....	^a 117	57	75.7	2.91	3.36	4,650	B.
January.....	358	59	151	5.81	6.70	9,280	B.
February.....	112	66	80.8	3.11	3.24	4,490	B.
March.....	143	94	121	4.65	5.36	7,440	B.
April.....	227	99	152	5.85	6.53	9,040	B.
May.....	^b 250	^a 141	195	7.50	8.65	12,000	C.
June.....	274	^b 130	179	6.88	7.68	10,700	C.
July.....	^b 198	^a 95	147	5.65	6.51	9,040	C.
August.....	102	^a 60	80.8	3.11	3.58	4,970	C.
September.....	^b 92	58	72.2	2.78	3.10	4,300	C.
The year.....	358	56	120	4.62	62.50	83,700	

^a Interpolated.^b Estimated by hydrographic comparison with record of Lake Creek at outlet of Packwood Lake.

Monthly discharge of Lake Creek at mouth, near Lewis—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1914-15.							
October.....	135	58	80.5	3.10	3.57	4,950	B.
November.....	358	95	202	7.77	8.67	12,000	B.
December.....	94	47	62.9	2.42	2.79	3,870	B.
January.....	68	51	57.9	2.23	2.57	3,560	B.
February.....	55	40	48.5	1.87	1.95	2,690	B.
March.....	65	40	54.6	2.10	2.42	3,360	B.
April.....	198	71	139	5.35	5.97	8,270	B.
May.....	170	80	99.2	3.82	4.40	6,100	B.
June.....	170	90	110	4.23	4.72	6,550	B.
July.....	127	80	99.5	3.83	4.42	6,120	B.
August.....	84	70	74.5	2.87	3.31	4,580	B.
September.....	70	49	58.2	2.24	2.50	3,460	B.
The year.....	358	40	90.5	3.48	47.29	65,500	

NOTE.—Maximum discharge during period of record, 1,440 second-feet Mar. 15-16, 1908; minimum discharge, 36 second-feet Sept. 8-19, 1910, and Oct. 30 to Nov. 3, 1911.

Yearly discharge of Lake Creek at mouth, near Lewis.

Year ending September 30.	Maxi- mum day.	Discharge in second-feet.				Annual mean per square mile.	Annual run-off.	
		Day.	Minimum.		Annual mean.		Inches.	Acre-foot
			Mean.	Month.				
1908.....	1,440	40	52.9	Oct.....	138	5.31	72.40	100,000
1909.....	428	40	52.5	Oct.....	99.6	3.83	52.07	72,100
1910.....	905	36	42.5	Sept.....	144	5.54	75.06	104,000
1911.....	393	40	50.7	Feb.....	112	4.29	58.22	80,700
1912.....	464	36	42.4	Oct.....	124	4.77	65.10	90,300
1914.....	358	56	72.2	Sept.....	120	4.62	62.50	86,700
1915.....	358	40	48.5	Feb.....	90.5	3.48	47.29	65,500
The period.	1,440	36	42.4	Oct., 1911..	118	4.55	61.81	85,600

HAGAR CREEK NEAR LEWIS (199).

Staff gage half a mile above North Fork and 2½ miles southeast of Lewis, in Lewis County.

Monthly discharge of Hagar Creek near Lewis.

Month.	Discharge in second-feet.			Run-off in acre- feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
September 9-30.....	18.6	6.2	8.93	389	C.
1911-12.					
October.....	8.0	6.7	7.45	458	C.
November.....	53	6.7	21.2	1,260	C.
December.....	22.8	11.7	15.8	972	C.
January.....	36	9.0	20.4	1,250	C.
February.....	55	11.8	26.6	1,530	C.
March.....	11.1	8.5	9.27	570	C.
April.....	16.6	9.2	12.1	720	C.
May.....	30	14.0	22.0	1,350	C.
June.....	24.2	11.1	15.9	946	C.
July.....	13.7	8.5	9.30	572	C.
August.....	12.6	7.4	8.62	530	C.
September.....	13.4	4.0	6.25	372	C.
The year.....	55	4.0	14.5	10,500	

Monthly discharge of Hagar Creek near Lewis—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy :
	Maximum.	Minimum.	Mean.		
1912-13.					
October.....	11.1	5.2	8.09	497	C.
November.....	53	8.3	18.7	1,110	C.
December.....	14.6	9.6	11.9	732	C.
May.....	49	14.0	31.1	1,910	C.
June.....	53	24.2	32.9	1,960	C.
July.....	22.4	10.8	15.0	922	C.
August.....	10.8	8.3	9.10	560	C.
September.....	14.0	7.4	8.55	509	C.
1913-14.					
October.....	15.0	7.4	11.1	682	C.
November.....	19.9	9.3	13.6	809	C.
December.....	15.6	9.3	11.7	719	C.
January.....	47	12.8	19.7	1,210	C.
February.....	25.3	9.8	11.7	650	C.
March.....	32	16.6	22.6	1,390	C.
April.....	36	15.6	25.5	1,520	D.
May.....	18.9	15.2	17.6	1,080	D.
June.....	20.6	9.8	13.3	791	D.
July.....	9.3	7.2	8.33	512	D.
August.....	7.1	6.8	6.89	424	D.
September.....	6.9	6.4	6.76	402	D.
The year.....	47	6.4	14.1	10,200	

NOTE.—Monthly discharge September to December, 1911, revised in this report. Monthly discharge January, 1912, to September, 1914, not previously published. Monthly mean discharge determined by estimating discharge for days on which gage was not read.

NORTH FORK OF HAGAR CREEK NEAR LEWIS (200).

Staff gage half a mile above mouth and 2½ miles southeast of Lewis, in Lewis County.

Monthly discharge of North Fork of Hagar Creek near Lewis.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1911.					
September 9-30.....	5.3	3.2	3.46	151	C.
1911-12.					
October.....	3.2	3.0	3.08	189	C.
November.....	14.0	3.0	6.59	392	C.
December.....	6.7	4.5	5.21	320	C.
January.....	14	4.3	8.28	509	C.
February.....	16.8	6.2	9.84	566	C.
March.....	6.3	4.6	5.00	307	C.
April.....	6.5	4.6	5.10	303	C.
May.....	8.0	4.9	5.88	362	C.
June.....	9.1	4.9	6.15	363	C.
July.....	4.9	3.9	4.29	264	C.
August.....	4.9	3.0	3.45	212	C.
September.....	4.8	3.2	3.42	204	C.
The year.....	16.8	3.0	5.50	3,990	
1912-13.					
October.....	4.1	3.2	3.27	201	C.
November.....	13.7	3.2	5.76	343	C.
December.....	6.9	3.4	4.90	301	C.
May.....	12.7	5.9	8.76	539	C.
June.....	12.7	6.9	8.75	521	C.
July.....	7.0	4.9	5.74	353	C.
August.....	4.9	3.4	4.26	262	C.
September.....	4.9	3.2	3.46	206	C.

Monthly discharge of North Fork of Hagar Creek near Lewis—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1913-14.					
October.....	4.8	3.2	3.71	228	C.
November.....	6.7	3.2	4.41	262	C.
December.....	6.5	3.4	4.38	269	C.
January.....	11.7	3.8	6.48	398	C.
February.....	8.6	4.3	5.21	289	C.
March.....	8.5	4.9	6.88	423	C.
April.....	7.3	4.9	6.21	370	D.
May.....	4.9	4.1	4.66	287	D.
June.....	8.6	3.2	4.95	295	D.
July.....	3.4	2.9	3.16	194	D.
August.....	3.0	2.5	2.75	169	D.
September.....	3.4	2.5	3.01	179	D.
The year.....	11.7	2.5	4.65	3,360	

NOTE.—Monthly discharge September to December, 1911, revised in this report. Monthly discharge January, 1912, to September, 1914, not previously published. Monthly mean discharge determined by estimating discharge for days on which gage was not read.

JOHNSON CREEK BELOW WEST FORK, NEAR LEWIS (201).

Staff gage just below West Fork, 1 mile above Glacier Creek, 6 miles above mouth, and 6 miles southeast of Lewis, in Lewis County.

Monthly discharge of Johnson Creek below West Fork, near Lewis.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1911.					
September 9-30.....	93	24	40.7	1,780	B.
October.....	37	22	30.2	1,860	B.
November.....	477	22	138	8,210	B.
December.....	128	34	76.0	4,670	B.
The period.....				16,500	

NOTE.—Monthly discharge computed from revised daily discharge published in Water-Supply Paper 394; supersedes monthly discharge published in Water-Supply Paper 313. Monthly mean discharge determined by estimating discharge for days on which gage was not read.

JOHNSON CREEK NEAR LEWIS (202).

1 mile above mouth and 3 miles southwest of Lewis, in Lewis County. Staff gage used 1907 to 1914; water-stage recorder installed October 1, 1918.

Drainage area, 30 square miles (approximate); measured on Plate I. Water-Supply Paper 313.

Monthly discharge of Johnson Creek near Lewis.

Month	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1907.					
August 21-31.....	63	56	62.4	1,360	C.
September.....	80	48	55.6	3,310	C.
The period.....				4,670	
1907-8.					
October.....	48	37	44.8	2,750	C.
November.....	283	37	88.2	5,250	B.
December.....	610	124	239	14,700	B.
January.....	172	80	136	8,360	B.
February.....	124	90	104	5,980	B.
March.....	1,510	80	278	17,100	B.
April.....	690	124	266	15,800	B.
May.....	465	232	298	18,300	B.
June.....	690	232	439	26,100	B.
July.....	535	154	333	20,500	B.
August.....	154	63	95.0	5,840	C.
September.....	63	48	54.9	3,270	C.
The year.....	1,510	37	198	144,000	
1908-9.					
October.....	124	42	64.3	3,950	C.
November.....	172	37	96.6	5,750	C.
December.....	189	63	89.4	5,500	C.
January.....	690	63	196	12,100	B.
February.....	232	90	131	7,280	B.
March.....	139	100	117	7,190	B.
April.....	189	100	128	7,620	B.
May.....	465	139	245	15,100	B.
June.....	770	154	445	26,500	B.
July.....	283	112	177	10,900	B.
August.....	112	63	74.3	4,570	C.
September.....	90	42	53.9	3,210	C.
The year.....	770	37	151	110,000	
1909-10.					
October.....	63	37	53.9	3,310	C.
November.....	1,830	63	533	31,700	B.
December.....	690	80	250	15,400	B.
January.....	465	80	153	9,410	B.
February.....	232	72	110	6,110	B.
March.....	1,310	232	534	32,800	B.
April.....	810	189	380	22,600	B.
May.....	690	339	425	26,100	B.
June.....	465	139	250	14,900	B.
July.....	189	63	121	7,440	B.
August.....	63	48	54.7	3,360	C.
September.....	56	33	41.1	2,450	C.
The year.....	1,830	33	243	176,000	
1910-11.					
October.....	283	63	123	7,560	B.
November.....	1,030	80	335	19,900	B.
December.....	398	70	200	12,300	B.
January.....	170	92	124	7,620	B.
February.....	105	60	74.9	4,160	B.
March.....	283	60	126	7,750	B.
April.....	339	118	180	10,700	B.
May.....	572	189	314	19,300	B.
June.....	730	258	433	25,800	B.
July.....	283	81	169	10,400	B.
August.....	81	51	62.5	3,840	B.
September.....	92	44	57.4	3,420	B.
The year.....	1,030	44	183	133,000	
1911-12.					
October.....	60	36	48.3	2,970	B.
November.....	650	36	210	12,500	B.
December.....	232	113	158	9,720	B.
January.....	642	88	335	20,600	B.
February.....	465	167	328	18,900	B.
March.....	152	92	111	6,820	B.
April.....	228	118	158	9,400	C.
May.....	810	152	409	25,100	C.
June.....	610	278	432	25,700	C.
July.....	273	92	169	10,400	C.
August.....	120	51	81.4	5,010	B.
September.....	189	51	94.6	5,630	B.
The year.....	810	36	210	153,000	

Monthly discharge of Johnson Creek near Lewis—Continued.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1912-13.					
October.....	92	51	65.3	4,020	B.
November.....	398	66	182	10,800	B.
December.....	339	105	142	8,730	C.
January.....	850	81	213	13,100	C.
February.....	432	70	164	9,110	C.
March.....	232	105	153	9,410	B.
April.....	690	118	326	19,400	B.
May.....	850	189	478	29,400	C.
June.....	1,120	465	687	40,900	C.
July.....	493	180	327	20,100	B.
August.....	170	70	108	6,640	B.
September.....	152	51	70.2	4,180	B.
The year.....	1,120	51	243	176,000	
1913-14.					
October.....	^a 192	50	119	7,320	B.
November.....	^a 235	^a 94	141	8,390	B.
December.....	189	76	110	6,760	B.
January.....	820	^b 80	234	14,400	B.
February.....	^a 260	82	107	5,940	B.
March.....	^a 380	^b 154	233	14,300	B.
The period.....				57,100	
1918-19.					
October.....	193	32	60.2	3,700	A.
November.....	208	74	98.2	5,840	A.
December.....		79	205	12,600	B.
January.....	1,980	68	370	22,800	B.
February.....		46	118	6,550	B.
March.....		52	112	6,890	B.
April.....	424	161	273	16,200	A.
May.....	720	220	360	22,100	A.
June.....	418	223	309	18,400	A.
July.....	223	93	160	9,840	A.
August.....	92	46	64.0	3,940	A.
September.....	86	44	55.3	3,290	A.
The year.....	1,980	32	183	132,000	

^a Estimated by comparison with Lake Creek by means of hydrographs.

^b Interpolated.

NOTE.—Maximum discharge during period of record, 2,500 second-feet at 4 a. m. Jan. 23, 1919; minimum discharge, 28 second-feet Sept. 1 and 7, 1914.

Yearly discharge of Johnson Creek near Lewis.

Year ending September 30.	Discharge in second-feet.					Annual run-off in acre-feet.
	Maximum day.	Minimum.			Annual mean.	
		Day.	Calendar month.			
			Mean.	Month.		
1908.....	1,510	37	44.8	Oct.....	198	144,000
1909.....	770	37	53.9	Sept.....	151	110,000
1910.....	1,830	33	41.1	Sept.....	243	176,000
1911.....	1,030	44	57.4	Sept.....	183	133,000
1912.....	810	36	48.3	Oct.....	210	153,000
1913.....	1,120	51	65.3	Oct.....	243	176,000
1919.....	1,980	32	55.3	Sept.....	183	132,000
The period.....	1,980	32	41.1	Sept., 1910	202	146,000

GLACIER CREEK NEAR LEWIS (203).

Staff gage half a mile above mouth of creek and $5\frac{1}{2}$ miles southeast of Lewis, in Lewis County.

Monthly discharge of Glacier Creek near Lewis.

Month.	Discharge in second-feet.			Run-off in acre-feet.	Accuracy.
	Maximum.	Minimum.	Mean.		
1911.					
September 9-30.....	15.2	11.5	12.6	550	C.
October.....	12.6	11.2	11.9	732	C.
November.....	38	11.2	20.2	1,200	C.
December.....	38	26	32.7	2,010	C.
The period.....				4,490	

NOTE.—Monthly discharge revised in this report. Monthly mean discharge determined by estimating discharge for days on which gage was not read.

CISPUS RIVER NEAR RANDLE (204).

Staff gage in sec. 18, T. 11 N., R. 8 E., a quarter of a mile below McCoy Creek and 3 miles southeast of Randle, in Lewis County.

Drainage area, 341 square miles; measured on Plate I, Water-Supply Paper 313.

Monthly discharge of Cispus River near Randle.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1910-11.							
October.....			1,130	3.31	3.82	69,500	D.
November.....	6,400	705	1,950	5.72	6.38	116,000	B.
December.....	2,140	1,250	1,510	4.43	5.11	92,800	B.
January.....	1,420	1,020	1,220	3.58	4.13	75,000	B.
February.....	1,090	820	939	2.75	2.36	52,100	B.
March.....	^a 3,000	820	1,470	4.31	4.97	90,400	C.
April.....	^a 3,100	1,250	1,860	5.45	6.08	111,000	C.
May.....	3,890	1,910	2,470	7.24	8.35	152,000	C.
June.....	3,600	1,030	1,950	5.72	6.38	116,000	C.
July.....	1,030	460	687	2.01	2.32	42,200	B.
August.....	460	325	378	1.11	1.28	23,200	A.
September.....	650	325	390	1.14	1.27	23,200	A.
The year.....	6,400	325	1,330	3.90	52.95	963,000	
1911-12.							
October.....	365	295	329	.965	1.11	20,200	A.
November.....	2,650	295	956	2.80	3.12	56,900	B.
December.....	1,080	650	913	2.68	3.09	56,100	B.
January.....	4,110	600	1,870	5.48	6.32	115,000	B.
February.....	3,080	1,440	2,130	6.25	6.74	123,000	C.
The period.....						371,000	

^a Estimated by means of hydrograph comparison with Cowlitz River at Randle.

NOTE.—Discharge for October, 1910, estimated by comparison with record for Cowlitz River at Randle.

TOUTLE RIVER NEAR CASTLE ROCK (205).

Staff gage $2\frac{1}{2}$ miles below junction of North and South forks, 6 miles northeast of Silver Lake, and 9 miles northeast of Castle Rock, in Cowlitz County.

Drainage area, 474 square miles; measured on Plate XV, Water-Supply Paper 253.

Monthly discharge of Toutle River near Castle Rock.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Inches.	Acre-feet.	
1909.							
September 4-30.....	855	390	460	0.970	0.97	24,600	A.
1909-10.							
October.....	1,420	410	649	1.37	1.58	39,900	A.
November.....	22,500	1,560	7,380	15.6	17.40	439,000	B.
December.....	8,950	1,380	3,320	7.0	8.07	204,000	B.
January.....	9,550	1,150	2,970	6.27	7.23	183,000	B.
February.....	11,400	1,850	3,450	7.28	7.58	192,000	B.
March.....	35,600	1,910	6,440	13.6	15.68	396,000	B.
April.....	5,490	1,770	2,890	6.10	6.81	172,000	B.
May.....	3,520	1,360	1,810	3.82	4.40	111,000	B.
June.....	1,580	674	974	2.05	2.29	58,000	A.
July.....	744	500	609	1.28	1.48	37,400	A.
August.....	575	330	415	.876	1.01	25,500	B.
September.....	560	342	398	.840	.94	23,700	B.
The year.....	35,600	330	2,600	5.49	74.47	1,880,000	
1910-11.							
October.....	4,450	418	1,150	2.43	2.80	70,700	A.
November.....	20,600	636	4,350	9.18	10.24	259,000	B.
December.....	4,130	1,270	2,470	5.21	6.01	152,000	B.
January.....	6,770	1,360	2,200	4.64	5.35	135,000	A.
February.....	1,640	900	1,260	2.66	2.77	70,000	A.
March.....	2,800	780	1,350	2.85	3.29	83,000	A.
April.....	1,710	1,080	1,360	2.87	3.20	80,900	A.
May.....	4,340	1,280	2,630	5.55	6.40	162,000	A.
June.....	2,970	1,080	1,720	3.63	4.05	102,000	A.
July.....	1,080	550	765	1.61	1.86	47,000	B.
August.....	550	320	393	.830	.96	24,200	B.
September.....	1,640	320	610	1.29	1.44	36,300	B.
The year.....	20,600	320	1,690	3.57	48.37	1,220,000	
1911-12.							
October.....	675	360	510	1.08	1.24	31,400	B.
November.....	11,400	380	3,090	6.52	7.27	184,000	A.
December.....	2,970	1,340	1,970	4.16	4.80	121,000	A.
January.....	13,400	1,230	4,220	8.90	10.26	259,000	A.
February.....	7,050	1,850	3,760	7.93	8.55	216,000	A.
March.....	1,710	958	1,240	2.62	3.02	76,200	A.
April.....	2,300	1,130	1,310	2.76	3.08	78,000	A.
May.....	3,330	1,400	1,930	4.07	4.69	119,000	A.
June.....	2,800	1,230	1,560	3.29	3.67	92,800	A.
July.....	1,460	568	938	1.98	2.28	57,700	B.
The period.....						1,240,000	

INDEX.

	Page.		Page.
Acknowledgments for aid	2	Chiwaukum, Little Wenatchee River near...	187
Acre-foot, definition of.....	3	White River near.....	194-195
equivalent of.....	3	Chiwawa River near Leavenworth.....	196
Adrian, Crab Creek at.....	199	Cispus River near Randle.....	356
Ahtanum Creek at The Narrows, near Tam- pico.....	273-274	Clark Fork at Metaline Falls.....	133-135
near Yakima.....	274-275	at Metaline Falls, plate showing measur- ing equipment, gaging car provided with reel, on.....	8
North Fork of, near Tampico.....	270-272	at Newport.....	128-132
plate showing artificial concrete control and gaging bridge on.....	8	Clark Fork basin, gaging-station records in.	128-137
South Fork of, near Tampico.....	275-278	Clear Creek near Darrington.....	109
Alderton, Puyallup River at.....	43-44	Clear Fork near Lewis.....	344-346
Alfalfa, Reservation drain at.....	292-294	Cle Elum River near Roslyn.....	237-241
Toppenish Creek at.....	288-289	Cle Elum, Swauk Creek near.....	242-243
Amboy, Lewis River near.....	332-334	Teanaway River near.....	241-242
American River near Nile.....	261	Yakima River at.....	208-211
Ariel, Lewis River at.....	335	Coal Creek near Lewis.....	346
Ashford, Nisqually River near.....	38	Columbia River at The Dalles, Oreg.....	119-128
Asotin Creek near Asotin.....	303	at Trail, British Columbia.....	114-116
		at Wenatchee and Vernita.....	116-118
B.		Columbia River basin, gaging-station records in.....	114-357
Baker River at Concrete.....	112-113	Conconully, Salmon Creek near.....	166-171
below Anderson Creek, near Concrete..	110-112	Concrete, Baker River at.....	112-113
plate showing type of recorder instal- lation for isolated locality on.....	8	Baker River near.....	110-112
Barlow Pass, North Fork of Sauk River near	104-105	Conversion tables.....	4-6
South Fork of Sauk River near.....	108-109	Cooperation, record of.....	1-2
Bellingham, Whatcom Creek near.....	113-114	Cougar Creek near Glenwood.....	323-324
Bibliography.....	8-25	Cougar, Lewis River near.....	332
Big Muddy Creek near Glenwood.....	323	Muddy River near.....	335
Blewett, Peshastin Creek at.....	198	Pine Creek near.....	335
Boyd's, Kettle River at.....	137	Swift Creek near.....	335-336
Brinnon, Dosewallips River at.....	35	Cowlitz River at Lewis.....	339-341
British thermal unit, equivalents of.....	3	at Mayfield.....	343-344
Buckley, White River at.....	47-50	at Mossy Rock.....	342-343
Bumping River near Nile.....	257-260	at Randle.....	341-342
Burbank, Snake River near.....	298-300	Cowlitz River basin, gaging-station records of.....	337-357
C.		Crab Creek at Adrian.....	199
Cabin Creek near Easton.....	232	near Warden.....	200
Calawah River near Forks.....	30	Crab Creek basin, gaging-station records in.	199-201
Carbon River at Fairfax.....	46-47	Cubic foot of water, weight of.....	3
Carson, L. D., acknowledgment to.....	2	Curlew Creek near Curlew.....	138
Cascade River near Marblemount.....	103-104		
Cashmere, Wenatchee River at.....	190-194	D.	
Castle Rock, Toutle River near.....	356-357	Dairy Creek near Glenwood.....	324
Cedar Falls, Cedar River at.....	54-55	Darrington, Clear Creek near.....	109
Cedar River at Cedar Falls.....	54-55	Sauk River at.....	106-108
at Cedar Lake, near North Bend.....	51-54	Sauk River near.....	105-106
at Renton.....	61-62	Data, accuracy of.....	7
near Ravensdale and Landsberg.....	56-61	explanation of.....	6-7
Chelan River at Chelan.....	178-183	Deer Creek at Oso.....	95
Chelan River basin, gaging-station records in.....	177-184	plate showing recorder installation on	8
Chewack Creek at Winthrop.....	176	Discharge, table for converting into theoreti- cal horsepower.....	5
Chiwaukum Creek near Chiwaukum.....	197	tables for converting, into run-off.....	4-5

	Page.		Page.
Discharge, table for converting run-off into...	6	Hooper, Palouse River at.....	308-312
Dosewallips River at Brinnon.....	35	Horsepower, equivalents of.....	3
Dryden, Wenatchee River at.....	190-194	theoretical, table for converting dis-	
Duckabush River near Duckabush.....	35-36	charge into.....	5
Dungeness River at Dungeness.....	34-35	Husum, White Salmon River at.....	327-329
near Sequim.....	34		
Duwamish River basin, gaging-station		I.	
records in.....	51-62	Icicle Creek near Leavenworth.....	197-198
East Creek near Elbe.....	40	Inchelium, Hall Creek at.....	138-140
plate showing artificial control and		Stranger Creek at.....	141-142
gaging bridge on.....	8	Index, North Fork of Skykomish River at..	68-71
Easton, Cabin Creek near.....	232	South Fork of Skykomish River near..	62-65
Kachess River near.....	232-236		
Yakima River at.....	206-207	J.	
Elbe, East Creek near.....	40	Johnson Creek below West Fork, near Lewis.	353
Elberton, Palouse River at.....	307	near Lewis.....	353-355
Electron, Puyallup River near.....	40-43	near Riverside.....	165-166
Ellensburg, Manastash Creek near.....	244-245		
Elwha River at McDonald Bridge, near Port		K.	
Angeles.....	31-33	Kachess River near Easton.....	232-236
near Port Angeles.....	33	Kalama River near Kalama.....	236-337
Entiat River at Entiat.....	184-187	Kanaskat, Green River at.....	51
Enumclaw, Greenwater River near.....	50-51	Keller, Sanpoil River at.....	155-157
Ephrata, Rocky Ford Creek near.....	200-201	Kettle River at Boyds.....	137
Equivalents, convenient.....	3	Kettle River basin, gaging-station records	
Ewan, Rock Creek near.....	312-314	in.....	137-138
F.		Kiona, Yakima River at.....	227-231
Fairfax, Carbon River at.....	46-47	Klickitat River above Pearl River, near	
Fairholm, Soleduck River near.....	28	Glenwood.....	316
Forks, Calawah River near.....	30	at Klickitat.....	320
Fort Simcoe, Simcoe Creek near.....	289-292	below Glenwood.....	319
Toppenish Creek near.....	285-287	near Glenwood.....	317-319
Foss River near Skykomish.....	66	near Lyle.....	320-321
G.		West Fork of, near Glenwood.....	322
Gallon of water, weight of.....	3	Klickitat River basin, gaging-station records	
Garcia, South Fork of Snoqualmie River		in.....	316-324
near.....	85-86		
Glacier Creek near Lewis.....	356	L.	
Glacier, North Fork of Nooksack River near..	114	La Grande, Nisqually River near.....	38-39
Glenwood, Big Muddy Creek near.....	323	Landes, Henry, acknowledgment to.....	2
Cougar Creek near.....	323-324	Landsberg, Cedar River near.....	56-61
Dairy Creek near.....	324	Lake Creek at mouth, near Lewis.....	349-351
Klickitat River below.....	319	at outlet of Packwood Lake, near Lewis.	347-349
Klickitat River near.....	316-319	Latah Creek at Tekoa.....	154
Pearl Creek near.....	321-322	North Fork of, at Tekoa.....	155
Swamp Creek near.....	322	Leavenworth, Chiwawa River near.....	196
West Fork of Klickitat River near.....	322	Icicle Creek near.....	197-198
Goldendale, Little Klickitat River near.....	324	Peshastin Creek near.....	199
Rock Creek near.....	315	Wenatchee River near.....	187-190
Squaw Creek near.....	316	Lewis River above Muddy River, near	
Grande Ronde River at Zindel.....	300-303	Cougar.....	332
Granite Falls, Pilchuck Creek near.....	91-92	at Ariel.....	335
South Fork of Stilaguamish River at.....	94	at Peterson ranch, near Cougar.....	332
Green River at Kanaskat.....	51	near Amboy.....	332-334
Greenwater River near Enumclaw.....	50-51	Lewis River basin, gaging-station records	
Guler, Trout Creek at.....	331	in.....	332-336
White Salmon River near.....	325	Lewis, Clear Fork near.....	344-346
H.		Coal Creek near.....	346
Hagar Creek near Lewis.....	351-352	Cowlitz River at.....	339-341
North Fork of, near Lewis.....	352-353	Glacier Creek near.....	356
Hall Creek at Inchelium.....	138-140	Hagar Creek near.....	351-352
Hartson, J. T., acknowledgment to.....	2	Johnson Creek near.....	353-355
Hoodsport, North Fork of Skokomish River		Lake Creek near.....	347-351
near.....	36-38	North Fork of Hagar Creek near.....	352-353
		Ohanapecosh River near.....	337-339
		Little Klickitat River near Goldendale.....	324

	Page.
Little Spokane River near Spokane.....	155
plate showing recorder installation on	8
Little Wenatchee River near Chiwaukum...	187
Long Lake, Spokane River near.....	152-154
Loomis, Sinlahekin Creek near.....	165
Lucerne, Railroad Creek at.....	183-184
Lyle, Klickitat River near.....	320-321
Lyre River at Piedmont.....	31

M.

Mabton, Yakima River near.....	225
Manastash Creek near Ellensburg.....	244-245
Marblemount, Cascade River near.....	103-104
Skagit River near.....	95-99
Stetattle Creek near.....	103
Martin, Yakima River near.....	201-205
Mayfield, Cowlitz River at.....	343-344
Measures, English, metric equivalents of.....	3
Metaline Falls, Clark Fork at.....	133-135
Sullivan Creek near.....	135-137
Meteor, Stranger Creek at.....	140-141
Methow River at Pateros.....	172-176
at Twisp.....	171-172
near Winthrop.....	171
Methow River basin, gaging-station records	
in.....	171-176
Mill Creek near Walla Walla.....	314-315
Miller Creek near Miller River.....	66-68
Mossy Rock, Cowlitz River at.....	342-343
Muddy River near Cougar.....	335

N.

Naches River at Anderson ranch, near Nile.	246-247
at Oak Flat, near Nile.....	247-251
plate showing United States Recla-	
mation Service gaging station on.	8
below Tieton River, near Naches.....	251-253
near North Yakima.....	254-257
Naches, Tieton River near.....	261-269
Nason Creek at Nason.....	195
Nespelem River at Nespelem.....	157-160
New Reservation canal at Parker.....	278-280
Newport, Clark Fork at.....	128-132
Nile, American River near.....	261
Bumping River near.....	257-260
Naches River near.....	246-251
Nisqually River near Ashford.....	38
near La Grande.....	38-39
near La Grande, plate showing recorder	
installation on.....	8
Nisqually River basin, gaging-station records	
in.....	38-40
Nooksack River, North Fork of, near Glacier.	114
North Bend, Cedar River near.....	51-54
Middle Fork of Snoqualmie River near...	73-76
North Fork of Snoqualmie River near....	81-84
South Fork of Snoqualmie River at.....	86-89
North Yakima, Naches River near.....	254-257
Yakima River near.....	215

O.

Ohanapecosh River near Lewis.....	337-339
Okanogan River at Okanogan.....	160-162
Okanogan River basin, gaging-station records	
in.....	160-171

	Page.
Old Reservation canal at Parker.....	280-282
Oroville, Similkameen River near.....	162-165
Oso, Deer Creek at.....	95

P.

Palouse River at Elberton.....	307
at Hooper.....	308-312
near Potlatch, Idaho.....	305-307
near Winona.....	307-308
Parker, New Reservation canal at.....	278-280
Old Reservation canal at.....	280-282
Sunnyside canal near.....	282-284
Yakima River near.....	222-224
Pateros, Methow River at.....	172-176
Pearl Creek near Glenwood.....	321-322
Peshastin Creek at Blewett.....	198
below Ingalls Creek, near Leavenworth..	199
Piedmont, Lyre River at.....	31
Pilchuck Creek near Granite Falls.....	91-92
Pine Creek near Cougar.....	335
Pomeroy, Tucannon River near.....	304
Port Angeles, Elwha River near.....	31-33
Post Falls, Idaho, Spokane River at.....	142-144
Potlatch, Idaho, Palouse River near.....	305-307
Prosser, Yakima River near.....	225-226
Puget Sound drainage basins, gaging-station	
records in.....	35-114
Puyallup River at Alderton.....	43-44
at Puyallup.....	45-46
plate showing measuring equipment	
and recorder installation on.....	8
near Electron.....	40-43
Puyallup River basin, gaging-station records	
in.....	40-51

Q.

Quillayute, Soleduck River near.....	29
Quinault River at Quinault Lake.....	25-27
plate showing recorder installation on	8

R.

Railroad Creek at Lucerne.....	183-184
Randle, Cispus River near.....	356
Cowlitz River at.....	341-342
Ravensdale, Cedar River near.....	56-61
Renton, Cedar River at.....	61-62
Reservation drain at Alfalfa.....	292-294
Richland, Yakima River near.....	231
Riparia, Snake River at.....	297-298
Riverside, Johnson Creek near.....	165-166
Rock Creek near Ewan.....	312-314
near Goldendale.....	315
Rock Creek basin, gaging-station records in.	315-316
Rocky Ford Creek near Ephrata.....	200-201
Roslyn, Cle Elum River near.....	237-241
Run-off, definition of.....	2-3
table for converting, into discharge.....	6
tables for converting discharge into.....	4-5

S.

Salmon Creek near Conconully.....	166-171
Sanpoil River at Keller.....	155-157
Satus Creek near Toppenish.....	294-297
Sauk River above Clear Creek, near Darring-	
ton.....	106

	Page.		Page.
Sauk River above Whitechuck River, near		Stehekin River at Stehekin.....	177-178
Darrington.....	105	Stetattle Creek near Marblemount.....	103
at Darrington.....	106-108	Stilaguamish River, South Fork of, at Granite	
near Suiattle Crossing, near Sauk.....	108	Falls.....	94
Sauk River, North Fork of, near Barlow		near Silverton.....	92-94
Pass.....	104-105	Stilaguamish River basin, gaging-station rec-	
plate showing type of recorder in-		ords in.....	92-95
stallation for isolated locality on.	8	Stranger Creek at Inchelium.....	141-142
South Fork of, near Barlow Pass.....	108-109	at Meteor.....	140-141
Second-foot, definition of.....	2	Sullivan Creek near Metaline Falls.....	135-137
equivalents of.....	3	Sultan River near Sultan.....	71-73
per square mile, definition of.....	2	plate showing recorder installation	
Sedro Woolley, Skagit River near.....	99-102	on.....	8
Selah, Wenas Creek near.....	245	Sultan, Skykomish River at.....	65
Sequim, Dungeness River near.....	34	Sunnyside canal near Parker.....	282-284
Silverton, South Fork of Stilaguamish River		Swamp Creek near Glenwood.....	322
near.....	92-94	Swauk Creek near Cle Elum.....	242-243
Simcoe Creek near Fort Simcoe.....	289-292	Swift Creek near Cougar.....	335-336
Similkameen River near Oroville.....	162-165		
Sinlahekin Creek near Loomis.....	165	T.	
Skagit River at Reflector Bar, near Marble-		Tampico, Ahtanum Creek near.....	273-274
mount.....	95-97	North Fork of Ahtanum Creek near... ..	270-272
near Marblemount.....	97-99	South Fork of Ahtanum Creek near... ..	275-278
near Sedro Woolley.....	99-102	Taneum Creek near Thorp.....	243
Skagit River basin, gaging-station records in	95-113	Teaway River near Cle Elum.....	241-242
Skokomish River, North Fork of, near Hoods-		Tekoa, Latah Creek at.....	154
port.....	36-38	North Fork of Latah Creek at.....	155
Skykomish, Foss River near.....	66	Terms, definition of.....	2-3
Skykomish River at Sultan.....	65	The Dalles, Oreg., Columbia River at.....	119-128
North Fork of, at Index.....	68-71	Tieton River above and below Oak Creek,	
South Fork of, near Index.....	62-65	near Naches.....	267-269
Snake River at Riparia.....	297-298	at headworks of Tieton canal, near	
near Burbank.....	298-300	Naches.....	263-266
Snake River basin, gaging-station records		plate showing recorder installation	
in.....	297-314	on.....	8
Snohomish River basin, gaging-station rec-		at McAllister Meadows, near Naches..	262-263
ords in.....	62-92	North Fork of, below Clear Creek, near	
Snoqualmie River, Middle Fork of, near		Naches.....	261-262
North Bend.....	73-76	Tokol Creek near Snoqualmie.....	90-91
plate showing recorder installation		Toppenish Creek at Alfalfa.....	288-289
on.....	8	near Fort Simcoe.....	285-287
near Snoqualmie.....	77-80	near White Swan.....	287-288
North Fork of, at cable bridge, near North		Toppenish, Satus Creek near.....	294-297
Bend.....	81	Toutle River near Castle Rock.....	356-357
North Fork of, near North Bend.....	81-84	Trail, British Columbia, Columbia River	
South Fork of, at North Bend.....	86-89	at.....	114-116
plate showing recorder installation		Trent, Spokane River at.....	145
on.....	8	Trout Creek at Guler.....	331
South Fork of, near Garcia.....	85-86	Trout Lake, White Salmon River near....	325-326
Tokul Creek near.....	90-91	Tucannon River near Pomeroy.....	304
Soleduck River near Fairholm.....	28	near Starbuck.....	304-305
near Quillayute.....	29	Twisp, Methow River at.....	171-172
Soleduck River basin, gaging-station records			
in.....	28-30	U.	
Spokane River at Post Falls, Idaho.....	142-144	Umtanum, Yakima River at.....	212-214
plate showing inclined and vertical		Underwood, Claudia L., acknowledgment to.	2
staff gages beside recorder instal-		Underwood, White Salmon River near....	329-331
lation.....	8		
at Spokane.....	145-152	V.	
at Trent.....	145	Vernita, Columbia River at.....	116-118
below Little Falls, near Long Lake....	152-154		
Spokane River basin, gaging-station records		W.	
in.....	142-155	Walla Walla, Mill Creek near.....	314-315
Spokane, Little Spokane River near.....	155	Walla Walla River basin, gaging-station	
Squaw Creek near Goldendale.....	316	records in.....	314-315
Starbuck, Tucannon River near.....	304-305		

	Page.
Warden, Crab Creek near.....	200
Washington, cooperation by.....	1-2
map of, showing location of gaging sta- tions.....	In pocket.
Wenas Creek near Selah.....	245
Wenatchee River at Cashmere and Dryden.....	190-194
near Leavenworth.....	187-190
near Wenatchee.....	194
Wenatchee River basin, gaging-station records in.....	187-199
Wenatchee, Columbia River at.....	116-118
Whatecom Creek near Bellingham.....	113-114
White River at Buckley.....	47-50
near Chiwaukum.....	194-195
White Salmon River at Husum.....	327-329
at splash dam, near Trout Lake.....	325-326
near Guler.....	325
near Underwood.....	329-331
White Salmon River basin, gaging-station records in.....	325-331
White Swan, Toppenish Creek near.....	287-288
Winona, Palouse River near.....	307-308

	Page.
Winthrop, Chewack Creek at.....	176
Methow River near.....	171

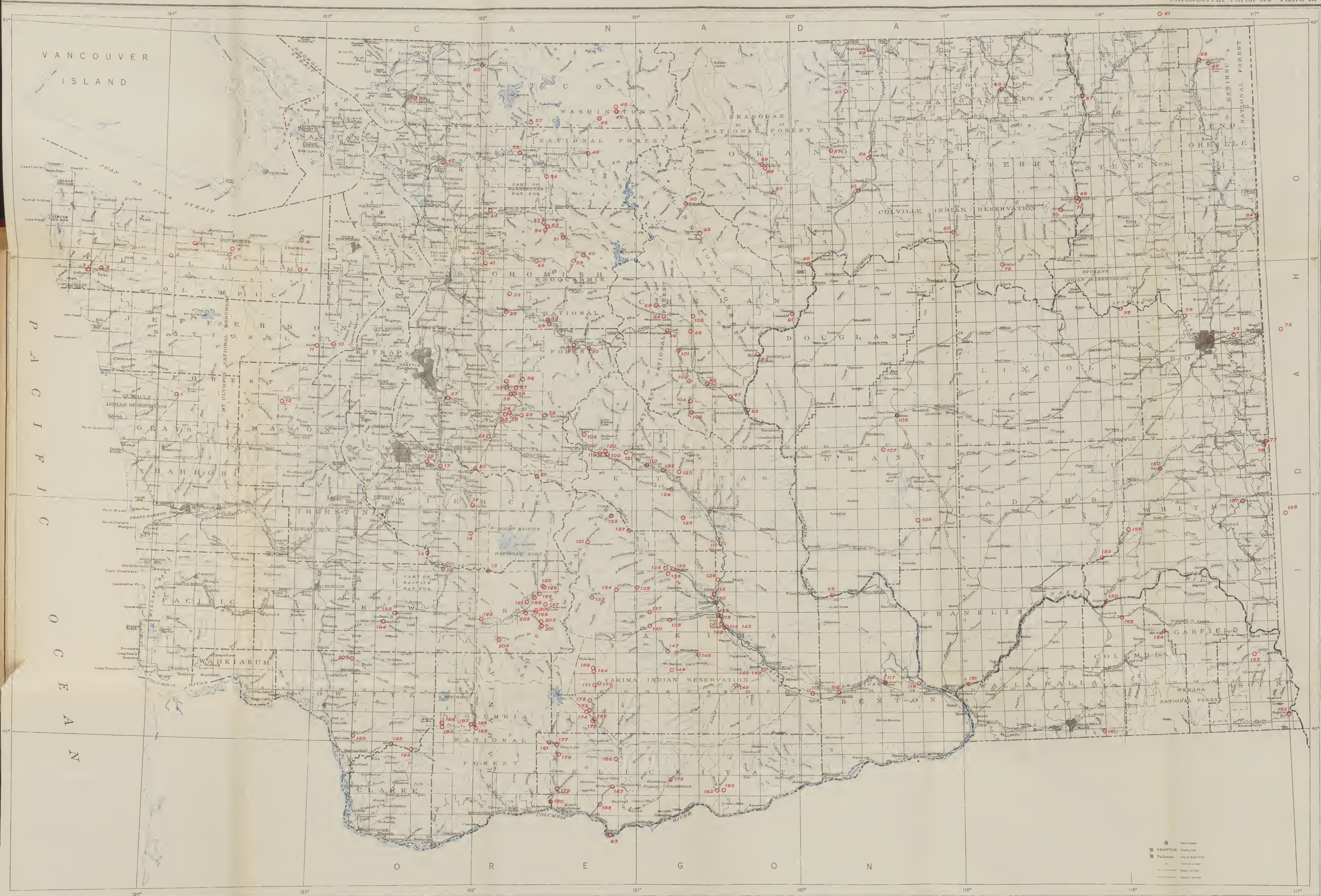
Y.

Yakima, Ahtanum Creek near.....	274-275
Yakima River at Cle Elum.....	208-211
at Easton.....	206-207
at Kiona.....	227-231
at Selah Gap, near North Yakima.....	215
at Umtanum.....	212-214
at Union Gap, near Yakima.....	215-221
near Mabton.....	225
near Martin.....	201-205
near Parker.....	222-224
near Prosser.....	225-226
near Richland.....	231
Yakima River basin, gaging-station records in.....	201-297

Z.

Zindel, Grande Ronde River at.....	300-303
------------------------------------	---------

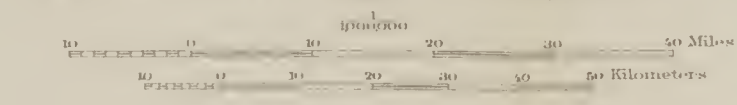




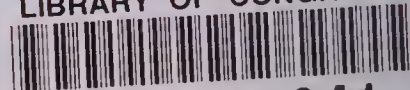
GAGING STATIONS

No.	STREAM AND LOCATION.	No.	STREAM AND LOCATION.
1.	Quinnell River at Quinault Lake.	103.	Peachskin Creek at Blewett.
2.	Solduck River near Fairholm.	104.	Peachskin Creek below Ingalls Creek, near Leavenworth.
3.	Solduck River near Quillayute.	105.	Crab Creek at Adrian.
4.	Calawah River near Forks.	106.	Crab Creek near Wanders.
5.	Lyre River at Piedmont.	107.	Rocky Ford Creek near Ephrata.
6.	Elwha River at McDonald bridge, near Port Angeles.	108.	Yakima River near Martin.
7.	Elwha River near Port Angeles.	109.	Yakima River at Easton.
8.	Dungeness River near Sequim.	110.	Yakima River at Cle Elum.
9.	Dungeness River at Dungeness.	111.	Yakima River at Umtanum.
10.	Dosewallips River at Brinnon.	112.	Yakima River at Selah Gap, near North Yakima.
11.	Duckabush River near Duckabush.	113.	Yakima River at Union Gap, near Yakima.
12.	North Fork of Skokomish River near Hoodspoor.	114.	Yakima River near Prosser.
13.	Nisqually River near Ashford.	115.	Yakima River near Mabton.
14.	Nisqually River near La Gronde.	116.	Yakima River near Kiona.
15.	East Creek near Elba.	117.	Yakima River near Richland.
16.	Puyallup River near Election.	118.	Yakima River near Easton.
17.	Puyallup River at Alderton.	119.	Cle Elum River near Roalyn.
18.	Puyallup River at Puyallup.	120.	Tasaway River near Cle Elum.
19.	Carson River at Fairfax.	121.	Tanauum Creek near Thorp.
20.	White River at Buckley.	122.	Manastash Creek near Ellensburg.
21.	Greenwater River near Enumclaw.	123.	Manastash Creek near Selah.
22.	Green River at Kanaskat.	124.	Naches River at Anderson ranch, near Nile.
23.	Cedar River at Cedar Lake, near North Bend.	125.	Naches River at Oak Flat, near Nile.
24.	Cedar River at Cedar Falls.	126.	Naches River below Tieton River, near Naches.
25.	Cedar River near Landsburg.	127.	Naches River near North Yakima.
26.	Cedar River near Ravensdale.	128.	Naches River near Nite.
27.	Cedar River at Ranton.	129.	American River near Nite.
28.	South Fork of Skykomish River near Index.	130.	North Fork of Tieton River below Clear Creek, near Naches.
29.	Skykomish River at Sultan.	131.	Tieton River at Mollatter Meadows, near Naches.
30.	Foss River near Skykomish.	132.	Tieton River at headworks of Tieton canal, near Naches.
31.	Mittler Creek near Millar River.	133.	Tieton River above and below Oak Creek, near Naches.
32.	North Fork of Skykomish River at Index.	134.	North Fork of Atlatum Creek near Temple.
33.	Sultan River near Sultan.	135.	Atlatum Creek at The Narrows, near Temple.
34.	Middle Fork of Snoqualmie River near North Bend.	136.	Atlatum Creek near Yalme.
35.	Snoqualmie River near Snoqualmie.	137.	South Fork of Atlatum Creek near Tampo.
36.	North Fork of Snoqualmie River at cable bridge, near North Bend.	138.	New Reservation canal at Parker.
37.	North Fork of Snoqualmie River near North Bend.	139.	Old Reservation canal at Parker.
38.	South Fork of Snoqualmie River near Garcia.	140.	Sunnydale canal near Parker.
39.	South Fork of Snoqualmie River at North Bend.	141.	Toppenah Creek near Fort Simcoe.
40.	Tokul Creek near Snoqualmie.	142.	Toppenah Creek near White Swan.
41.	Rickiult Creek near Granite Falls.	143.	Toppenah Creek at Alfalfa.
42.	South Fork of Stillaguamish River near Silverton.	144.	Simcoe Creek near Fort Simcoe.
43.	South Fork of Stillaguamish River at Granite Falls.	145.	Reservation drain at Alfalfa.
44.	Deer Creek at Oso.	146.	Satus Creek near Toppenah.
45.	Skagit River at Reflector Bar, near Marblemount.	147.	Snake River at Riparia.
46.	Skagit River near Marblemount.	148.	Snake River near Burbank.
47.	Skagit River near Sedro Woolley.	149.	Grande Ronde River at Zindel.
48.	Stiettle Creek near Marblemount.	150.	Asotin Creek near Asotin.
49.	Casade River near Marblemount.	151.	Tucannon River near Pomeroy.
50.	North Fork of Sauk River near Barlow Pass.	152.	Tucannon River near Starbuck.
51.	Sauk River above Whitechuck River, near Darrington.	153.	Palouse River near Potlatch, Idaho.
52.	Sauk River above Clear Creek, near Darrington.	154.	Palouse River at Tabor.
53.	Sauk River at Darrington.	155.	Palouse River near Winona.
54.	Sauk River near Silette Crossing, near Sauk.	156.	Palouse River at Hooper.
55.	South Fork of Sauk River near Barlow Pass.	157.	Rock Creek near Ewan.
56.	Clear Creek near Darrington.	158.	Mill Creek near White Walla.
57.	Baker River below Anderson Creek, near Concrete.	159.	Rock Creek near Goldendale.
58.	Baker River at Concrete.	160.	Sewer Creek near Portland.
59.	Whetcom Creek near Bellingham.	161.	Klickitat River above Paul Creek, near Glenwood.
60.	North Fork of Koolick River near Giesler.	162.	Klickitat River near Glenwood.
61.	Columbia River at Trail, B. C.	163.	Klickitat River at Klickitat.
62.	Columbia River at Wenatchee and Vernita.	164.	Klickitat River near Lyle.
63.	Columbia River at The Dalles, Oreg.	165.	Pearl Creek near Glenwood.
64.	Clark Fork at Priest River, Idaho, and Newport, Wash.	166.	Swamp Creek near Glenwood.
65.	Clark Fork at Metaine Falls.	167.	West Fork of Klickitat River near Glenwood.
66.	Sullivan Creek near Metaine Falls.	168.	Cunningham Creek near Glenwood.
67.	Kettle River at Boyse.	169.	Curlew Creek near Curlew.
68.	Curlew Creek near Curlew.	170.	Hall Creek near Glenwood.
69.	Hall Creek at Inchellum.	171.	Stranger Creek at Meteor.
70.	Stranger Creek at Meteor.	172.	Stranger Creek at Inchellum.
71.	Stranger Creek at Inchellum.	173.	Spokane River at Post Falls, Idaho.
72.	Spokane River at Post Falls, Idaho.	174.	Spokane River at Trent.
73.	Spokane River at Trent.	175.	Spokane River at Spokane.
74.	Spokane River at Spokane.	176.	Spokane River below Little Falls, near Long Lake.
75.	Spokane River below Little Falls, near Long Lake.	177.	Latah Creek at Tekoa.
76.	Latah Creek at Tekoa.	178.	North Fork of Latah Creek at Tekoa.
77.	North Fork of Latah Creek at Tekoa.	179.	Little Spokane River near Spokane.
78.	Little Spokane River near Spokane.	180.	Sanpoll River at Keller.
79.	Sanpoll River at Keller.	181.	Naspelem River at Naspelem.
80.	Naspelem River at Naspelem.	182.	Okonagan River at Okonagan.
81.	Okonagan River at Okonagan.	183.	Similkameen River near Oroville.
82.	Similkameen River near Oroville.	184.	Simkhekin Creek near Loomie.
83.	Simkhekin Creek near Loomie.	185.	Johnson Creek near Riverside.
84.	Johnson Creek near Riverside.	186.	Salmon Creek near Conconully.
85.	Salmon Creek near Conconully.	187.	Methow River near Winthrop.
86.	Methow River near Winthrop.	188.	Methow River at Twisp.
87.	Methow River at Twisp.	189.	Methow River at Pateros.
88.	Methow River at Pateros.	190.	Chewack Creek at Winthrop.
89.	Chewack Creek at Winthrop.	191.	Stehakin River at Stehakin.
90.	Stehakin River at Stehakin.	192.	Chelan River at Chelan.
91.	Chelan River at Chelan.	193.	Railroad Creek at Lucerne.
92.	Railroad Creek at Lucerne.	194.	Entiat River at Entiat.
93.	Entiat River at Entiat.	195.	Little Wenatchee River near Chiwaukum.
94.	Little Wenatchee River near Chiwaukum.	196.	Wenatchee River near Leavenworth.
95.	Wenatchee River near Leavenworth.	197.	Wenatchee River at Cashmere and Dryden.
96.	Wenatchee River at Cashmere and Dryden.	198.	White River near Chiwaukum.
97.	Wenatchee River near Wenatchee.	199.	Nason Creek at Nason.
98.	White River near Chiwaukum.	200.	Chiwawa River near Leavenworth.
99.	Nason Creek at Nason.	201.	Chiwaukum Creek near Chiwaukum.
100.	Chiwawa River near Leavenworth.	202.	Chiwaukum Creek near Leavenworth.
101.	Chiwaukum Creek near Chiwaukum.	203.	Clispus River near Hanley.
102.	Clidle Creek near Leavenworth.	204.	Touba River near Castle Rock.
103.	Peachskin Creek at Blewett.	205.	Touba River near Castle Rock.

MAP OF THE STATE OF WASHINGTON SHOWING LOCATION OF GAGING STATIONS



LIBRARY OF CONGRESS



0 029 702 341 A